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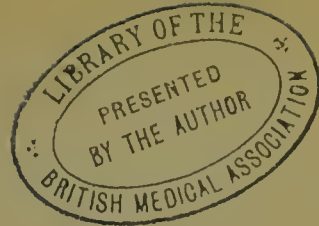
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- 1863.—Prizes not advertised, and no Essays sent in.
- 1868.—Five Essays submitted—First Prize, Dr. Mapother. Second Prize, Dr. Ashe.
- 1873.—Five Essays submitted—First Prize, Dr. Ashe. Second Prize, Dr. Dale of Plymouth.
- 1879.—Twelve Essays submitted—First Prize, Dr. Walter Rivington, of London. Second Prize, Dr. Thomas Laffan, of Cashel.
- 1883.—Prizes not advertised, and no Essays sent in.
- 1887.—Nine Essays submitted—First Prize, Dr. Walter Rivington, of London. Second Prize, Dr. Thomas Laffan, Cashel.

1900 W. Nelson Hardy

Sic Vos Non Vobis.



CARMICHAEL PRIZE ESSAY.

THE
STATE OF THE MEDICAL PROFESSION
IN
GREAT BRITAIN AND IRELAND,
IN 1900.

BY
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F.R.C.S., EDIN. ; M.R.C.S., ENG. ; L.R.C.P., EDIN.
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Treasurer, United Kingdom Police Surgeons' Association.

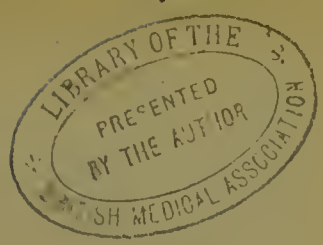
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TO
ARCHIBALD HAMILTON JACOB, M.D., F.R.C.S.I.,
PATRE CLARE FILIUS CLARIOR,
WHOSE NAME HAS FOR MANY YEARS
STOOD FOR ALL THAT IS BEST
IN
IRISH MEDICAL JOURNALISM,
THIS ESSAY IS INSCRIBED
BY HIS ATTACHED FRIEND,
THE AUTHOR



PREFACE.



MY design in writing the following Essay has been to present a picture which might be useful both to contemporaries and to those who come after us, of what the Medical Profession in Great Britain and Ireland has been doing and thinking about at the close of the nineteenth century. I was precluded by the terms of competition from making quotations or extracts from any published work or paper, which readers, perhaps, will not consider a disadvantage. As the Essay had to be sent in by June 30th, 1900, it deals only with certain subjects, such as the Surgery of the War in South Africa and the Midwives' Bill, down to that date.

Some of the suggestions made with reference to the British Medical Association, such as the inclusion of unattached members, are now being discussed in the Report of its Constitution Committee. A pathetic interest attaches to the dedication on the opposite page, since it was accepted "with pleasure" by Dr. Jacob six days before his lamented death. I have, therefore, allowed it to remain as I wrote it in his lifetime.

H. NELSON HARDY.

DULWICH,

May, 1901

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THE STATE OF THE MEDICAL PROFESSION IN 1900.

THE condition of the Medical Profession in Great Britain and Ireland at the present time may be considered under two aspects, in accordance with Mr. Carmichael's express desire in instituting these periodical essays, "with the view of rendering it more useful to the public, and a more respectable body than it is at present." In the first place we may consider it as embodying a progressive science, or rather quintessence of sciences, including within its scope all the knowledge gained from such sciences as Anatomy, Physiology, Chemistry, Physics, and Electricity, and applying the knowledge thus gained to the benefit of the public in the cure of disease; in the second aspect of our subject we may look upon the Profession of Medicine as a practical art and means of gaining a livelihood. That medicine is a progressive science, and that its progress has been great and rapid in recent years, can be readily shown, I believe, by taking a few examples in each of its three divisions of Physic, Surgery, and Pharmacy.

The advances made in the diagnosis and treatment of TUBERCULOSIS and of DIPHTHERIA, and the tracing of MALARIAL FEVER to infection by the bite of the anopheles or infection-bearing mosquito, afford excellent examples of the work done in the Department of Physic.

TUBERCULOSIS.

The recent advances in the diagnosis and treatment of tuberculosis in the United Kingdom have been largely due to Koch's researches in bacteriology. His discovery of the *bacillus tuberculosis* let us into the secret of the disease, as his previous discovery of the *B. anthracis* had into that of anthrax. Long

before this discovery was made, the Italian physicians had strongly held that consumption was catching, but this opinion was not generally held by teachers or practitioners in other countries, and in our own country it was, for the most part, strongly denied, and the doctrines of heredity, and of propagation in consequence of some innate proclivity in certain strains of mankind, and in certain races, was usually set forth. The discovery of the *B. tuberculosis* has thrust this doctrine of heredity into the background, and has led to some laborious researches designed to show that congenital tuberculosis, though not unknown, is too rare to affect general conclusions as to the origin of the disease; though even yet many physicians who are acquainted with the family history of their patients are morally convinced of the innate bias to tuberculosis in certain families—a bias so strong in some cases that no matter how favourable the conditions in which they are placed, member after member is struck down by the disease. Nevertheless, it has been abundantly proved that the *B. tuberculosis* can be transmitted directly from person to person. Its appearance in the sputum has become a matter of common knowledge, and when the sputum is dried and scattered as small particles in the air, it requires little imagination to follow the course of infection. Bacteriological observers tell us that the microbe does not form spores, and that long survival of individuals is very precarious. The bacillus is indeed so far composed of fat that it resists desiccation and starvation better than many other microbes, yet all observers are agreed that it is very perishable, especially in the daylight. If involved in tenacious spittle, and concealed in damp and shady places, it may survive for weeks or even months, yet in light, clean, and airy houses, no such persistence is probable.

The entry of the tubercle bacillus into the human body has been traced by mouth and nose, by tonsil and windpipe. It may be inhaled with the air, or swallowed with food, chiefly milk, and may infect either the bowel in early life, in youth the nose, ear, cervical glands, or the bones; in later life chiefly the lung, probably by direct inhalation. Further investigations have shown the way in which tubercle reaching the lungs engrafts itself; that it settles upon the mucous membrane

in one of the smaller bronchi in the posterior apical bronchial area; that there, having, if circumstances are favourable, implanted itself securely upon the part, it breeds, and goes through the manufacture of secondary products, such as small cell-infiltration and giant cells in the sub-epithelial layer; a thrombosis of the tube is thus established; beyond the block atelectasis of the corresponding distal area ensues, with secondary inflammatory and obliterative processes, and later with circumscribed pleurisy. On the hither side of the block the tube dilates, gets filled with degenerate secretion, and may undergo softening and ulceration, until after some muscular strain or effort it ruptures, and tubercle bacilli and septic tissue products are either swept into the sputum or carried by aspiration into other pulmonary areas to infect them.

The result of these investigations has naturally been to alter our whole conception of the disease, and to turn into new channels our efforts for its prevention and treatment. For example, it having been found that the tubercle bacillus exists in several animals used for human food, it was seen to be of the utmost importance to prevent its transmission from them to mankind. Cattle, by their meat and by their milk, were found to be the chief spreaders of the disease, then pigs, and lastly poultry. The greatest danger of all lies in milk, which may either have contained bacilli from the first, or have been infected from the udder, which often contains foci. The practical lesson from this, of course, is that all milk should be boiled, in order to kill the bacilli, before being used for food, and that bodies of all animals before being taken to the butcher's shop, should be carefully examined for tubercle, as they are in Germany.

For the phthisical patient himself the great remedy is the open-air treatment, the principle of which was advocated more than forty years ago by an Irish physician, the late Dr. Henry MacCormac, of Belfast, father of another celebrated Irishman, Sir William MacCormac, of London. Dr. MacCormac was in the habit of advising all his patients to sleep with their windows open even in the depth of winter, and he even read a paper before one of the Medical Societies of London advocating the same practice. He was, however, in advance of his time, and after the reading of the paper several "grave and reverend

seigneurs" protested against the waste of the valuable time of the society in listening to such a paper.

Later on, however, the idea was taken up and followed by Dr. Henry Bennett in the Riviera, and Dr. Ruedi at Davos, and the open-air treatment has now been reduced to a system by Dr. Walther, at the Nordrach Sanatorium. The success which attended this system on the Continent has already led to the establishment of several sanatoria in England, Ireland and Scotland, and there are, as everyone acquainted with Ireland must be aware, many spots in it suitable for the purpose—to name only two of these, Queenstown in the South, on the Cove of Cork, and Newcastle in the north, on the Bay of Dundrum, close to the famous Mourne Mountains, are places which deserve that the advantages they offer to invalids should be far more widely known than they are at present. At the same time it must be remembered that the full advantages of sanatorium treatment cannot be obtained unless, in addition to a good site, an abundant supply of pure water, and of good and well-cooked food, and sunny chambers, with balconies and shelters where necessary, there is a physician in command, aided by competent nurses, who directs and controls the daily life of the inmates. If these conditions are secured, phthisical patients can be as successfully treated in Newcastle or Queenstown as at Nordrach, in Great Britain or Ireland as in the South of France.

THE TREATMENT OF DIPHTHERIA.

It is now about five years since Roux, at the Eighth International Congress of Hygiene, at Budapest, read his classic paper on the treatment of diphtheria by antitoxic serum. The treatment by this means had been previously much discussed in Germany, but it was Roux's paper which first brought it prominently before the notice of the public, as well as of the profession. At first the remedy was looked upon with some suspicion, but having been given a thorough and unbiassed trial in hospitals where large numbers of cases have to be treated, both on the Continent and in the infectious disease hospitals of the London Metropolitan Asylums Board, it has been found that since its introduction there has been a very

decided lowering of the rate of mortality of this hitherto most fatal disease. Thus, taking all the cases admitted to the hospitals of the Metropolitan Asylums Board in 1894, 1895, 1896, and 1897, we find the mortality gradually falling from 29·2 in 1894 to 22·8—21·2—and 17·6 in the succeeding years. At one of these hospitals (the Eastern) the case mortality of diphtheria in children under five years of age has been reduced from 46 per cent. in 1894 to 27·6 per cent. in 1897. Further, the cases of laryngeal diphtheria, whether operated on or not, show double the amount of recoveries when treated with antitoxin to those not so treated, and as the statistics refer to thousands of cases the evidence in favour of the antitoxin treatment seems very strong. To give a brief summary of results as recorded in these statistics, it may be said that whereas before antitoxin was introduced, of 100 tracheotomies you could only expect to save 29, you can now expect to save 53; of laryngeal cases not operated upon, in those days not more than 48, now not fewer than 75; of all cases then not more than 34, now not fewer than 49. Even better results have been obtained in Chicago, where the remedy has been in use for three or four years. Of 4,074 cases treated with antitoxin the death rate was only 6·77 per cent., a result never hitherto approached on so large a number of cases. The great importance of administering antitoxin as soon as the disease is diagnosed is shown by the statistics of deaths following its use on different days of the attack.

On the 1st day there were	355	cases with	1	death.
2nd day	„	1018	„	17 deaths.
3rd day	„	1509	„	57 „
4th day	„	720	„	82 „
Later	„	469	„	119 „

Moved by a knowledge of these facts, the authorities of one of the largest London parishes (that of Camberwell) has made arrangements whereby a supply of antitoxin may be obtained, without charge, by any qualified medical man from its Bacteriologist, at any hour of the day or night, thus making one of the latest advances of medical science as available for the children of the poor as for those of the rich.

MALARIA AND THE MOSQUITO.

The discovery of the connection between mosquito bites and the spread of malaria forms one of the most brilliant advances in medicine in recent years. From the time of the ancient Romans this pest has infested certain regions in Italy, notably the Campagna near Rome, which from June to the end of August is practically deserted on account of it. Five millions of acres of land remain uncultivated in consequence, and about two millions of Italian labourers annually suffer from it. Successive rulers of Italy have tried in vain to stop this plague; the Popes in the time of their temporal power; the French during their temporary occupation, and the Italian Government since Italy has again become a nation—all have tried their hands, and all have signally failed. Hundreds of thousands of trees have been planted in the marshy districts, eucalyptus, fir, citron, orange, elm, chestnut, but with hardly any good result; the drying up of the marshes at the expense of the State has been decreed, and the digging of canals by land-owners, but a recent report states that 95 per cent. of labourers in marshy districts near Rome are still being attacked. In our own possessions in India and on the west coast of Africa the mortality and sickness caused by malaria are well known, and it has been largely due to the excellent work done during the last decade by one of our Indian Medical Officers, Major Ross, that the spread of the disease has been distinctly traced to infection by the bite of a special kind of mosquito, the anopheles. Tracing the matter back, we find, indeed, that half-a-century ago, and again about twenty years since, the causation of malaria by insects was suggested in America. In 1891 this theory was again brought forward by Laveran, and again by Flügge in the same year, and in 1892 Pfeiffer, in a paper on the *Coccidium* of the Rabbit, in which he showed that this parasite is capable of two different cycles of development, one being exogenous, mentions that Koch had suggested that a similar condition might hold good for the parasite of malaria, and that exogenous malaria spores might be conveyed to man through the agency of blood-sucking insects such as mosquitos. This theory was brought prominently before the Medical profession in England by Dr.

Patrick Manson, in his Gulstonian Lectures in 1894, his suggestion being that like what takes place in the case of filaria Bancrofti, his own work in connexion with which is well known, the female mosquito fills herself with infected blood, lays her eggs some days later, and dies beside them. The water then becomes contaminated with the spores of the parasite of malaria, through which they might be taken into the human body, or they might be breathed in the dust of dried-up pools, or the larvæ coming out of the eggs might eat them with the body of the mother; or the pond might become infected by mosquitos containing the parasite falling and dying on it. On the other hand, King, Laveran, Bignani, Mendini and Koch thought that the infection was conveyed by the direct bite of mosquitos.

Hitherto we have been dealing with theories only, but it remained for some competent observer, working on the lines recommended by the great Harvey, "to search out the secrets of nature by way of experiment," in order to determine which of these theories had most truth in it, and this was the task to which Major Ross, of the Indian Medical Service, addressed himself. He owns that it was Dr. Manson's theory, based on some recondite researches into the changes in the parasite, showing that this organism requires a suctorial insect for its further development, which first pointed out to him the exact way in which the subject must be attacked by the experimental method. He commenced his experiments in India in 1895; in August, 1897, he first succeeded in cultivating the parasites of malaria in two species of mosquito. By August, 1898, the development of one of the parasites of birds in the mosquito had been worked out, and healthy birds had been infected by bites of infected insects, thus completing the life-cycle of these organisms.

Dr. Ross's work, in tracing out the course of the malarial parasite through the tissues of the mosquito, affords a capital example of painstaking progress in the present day. Beginning in the stomach as a flagellate organism which has been sucked up in infected blood, it imbeds itself in the stomach wall as a round pigmented body, working its way through the successive coats of the viscus until it comes to lie under the outer layer, and finally to bulge into the body cavity. By this time its bulk

has so greatly increased by the repeated fragmentation of its nucleus and consequent enlargement of its contents, that it has become practically converted into a huge spore-bag full of little rod-like spores ; the outer membrane ruptures and the spores are set free in the tissues, to find their way ultimately, in some curious manner, into the salivary or venom glands. Here they crowd the acini in myriads, waiting, apparently, their opportunity to be discharged into the next human being bitten, there to begin anew the cycle of their development. The time and care which must have been taken to find out all this, as well as to distinguish between the true infection-bearing mosquito, the anopheles, from the harmless *Culex*, which much resembles it, may be imagined. Fortunately, the dangerous form is only about a tenth as common as the harmless one, and so fastidious in the choice of its breeding-pools that these may number only a dozen or so in an entire neighbourhood ; so that Dr. Manson and Dr. Ross are both quite sanguine as to the possibility of destroying them by draining or by poisoning with kerosene, and as to the extermination of malaria by these means in any given neighbourhood. It is not only for prevention, however, that this discovery of the connexion between mosquitoes and malaria is important. Diagnosis is made absolutely accurate, and treatment definite and certain. Quinine has been found to kill the malaria parasite as certainly as arsenic, if taken in sufficient quantity, poisons man. Hence the microscope becomes indispensable to all those who practice in the tropics, and when once the parasite is discovered in the blood, quinine will cure 99 per cent. of cases, if introduced and absorbed in time. Dr. Ross's experiments have been repeated and confirmed by Dr. Daniels of the Malaria Commission which was sent out to Calcutta by the Royal Society and the Colonial Office ; by Professors Grassi, Bignami, and Bastianielli of Rome, and later on by Dr. Koch, and they are now generally accepted by the scientific world. Hence, instead of the vague surmises of yesterday, that malaria, being found to be endemic in humid tracts of country, was due to germs in the soil, air, and water of such tracts, that they propagate themselves in these elements, that they are carried by winds from one spot to another, that they rise in mists and exhalations from the soil, that they infect

us through the air we breathe or the water we drink ; we have now a large body of exact observations to depend on. We can follow the actual parasites which cause the disease step by step in their development in the mosquito, and we can detect them in that gland of the insect which secretes the irritating poison injected into us when bitten. Finally, we can infect any number of healthy birds by allowing infected mosquitos to bite them. The proof is, therefore, complete, and leads to the hope that by resolutely waging war upon the larvæ of the anopheles, we may before long practically extinguish the plague of malaria even in districts which have been most prone to it hitherto. The bearing of this subject on the necessity for increased facilities being given for the study of tropical diseases, in these islands, will be seen when we come to consider the subject of the Medical Schools.

SURGERY.

In Surgery the great event of the century now drawing to its close has undoubtedly been the great discovery of Lister, by which septic disease, whether in hospitals or elsewhere, has been robbed of its terrors, if not absolutely abolished as regards wounds treated antiseptically. We who live in the present day can hardly as yet fully appreciate the enormous benefits destined to flow from the revolution in medical and surgical treatment which Lister effected. For it is not only that surgery has been changed from a craft to a science, but medicine, midwifery, pathology, sanitation, all have shared the progress which Listerism first introduced into surgical work. We may say, too, without fear of contradiction, that the past nine months, during which war has been waged in South Africa, has furnished the most striking example of the usefulness of Listerism in military surgery. Curiously enough, too, it was but a few months before the commencement of that war that a well-known Scotch teacher, Professor Ogston, of Aberdeen, in his address in Surgery to the British Medical Association at Portsmouth, had been uttering a Jeremiad over the condition of the Army Medical Service,* and had stated that while it might, indeed, be equal to the demands made upon it by expeditions

* See his Address in Surgery, *Brit. Med. Journal*, Aug. 5th, 1899.

in the jungles and swamps of West Africa, the deserts of the Nile, or the ravines of the Himalayas, it was not at all in a condition to deal with a war against a great power with arms and ammunition equal to our own, and in which thousands of wounded would have to be treated. Statistics showed, the professor said, that of all wounds in battle 7·4 per cent. were of the brain, 7·5 per cent. of the chest, and 4·7 per cent. of the abdomen, amounting to 20 per cent. of all wounds, which must be treated by surgeons properly trained in antiseptic methods, or a fearful waste of life would result. But military and naval surgeons, he maintained, had virtually no training to fit them for performing antiseptically the operations on the brain, the thorax, or the abdomen, which might be required of them in time of war, nor had any of the junior officers sufficient opportunities of practising modern surgery. The contrast between the medical and other scientific departments of the army was, we were assured, astonishing. While such scientific corps as the artillery, engineering, and telegraphy had all the advantages that modern science could suggest, the R.A.M.C. was left in a condition that might have done well enough fifty years ago, when rough and ready surgeons did rough and ready work, but was quite unfit to deal with the revolutionised conditions of modern warfare. This and a great deal more to the same effect, comparing our army medical service with those of Germany and Russia, much to the disadvantage of ours, seemed to powerfully impress the hearers of the address with the "parlous condition" in which our wounded soldiers would be placed in the event of war breaking out. Three months after this address was given the war in South Africa came suddenly and unexpectedly upon us, and what so far has been the judgment of all competent critics on the spot, including Sir William MacCormac, President of the English College of Surgeons; Sir William Thomson, Chief Surgeon to the Irish Hospital, and Mr. Treves, Consulting Civil Surgeon with the forces? Why, that in no former war has an army been so well attended to by its surgeons; that nowhere have antiseptic principles, of which the surgeons named have themselves been among the foremost advocates, been more thoroughly carried out; and that so thoroughly efficient has been the service of the R.A.M.C., that Sir William MacCormac felt

in March last that there was really no need for his presence in South Africa any longer, and returned to Europe.

A description of a week's work done by one of the field hospitals near Modder River, in February, will give some idea of the surgical work done at the front, and as to how it was done. The field hospital left Modder River on February 10th, proceeding by rail to Eslin, and thence route march to Graspan; next day to Ramsdom, thence to Waterfall Farm, arriving at the Reit River at noon, and crossing the drift about 9 p.m. On February 14th the hospital marched at 1 a.m., reaching Weydrooi Drift at 10 a.m., and left same evening at 5 for Klip Drift, where in heavy rain it halted and bivouacked. On February 15th the hospital crossed the drift at 8 a.m., and encamped on the north bank of the Modder River. Next day it recrossed and bivouacked till 3 a.m., and then marched to Klip Kraal, resting there a few hours. On February 17th, at 5 p.m., the hospital marched towards Paardeburg, arriving at daybreak of February 18th in sight of the enemy, who were holding a position on the north bank of the river. The action commenced soon after daybreak, on February 18th. The field hospital was pitched in rear of a battery of artillery which was shelling the Boer position. During the day wounded men were continually being brought in, and several operations were performed in the operating tent, dressings applied, etc., until between 4 and 5 p.m. hospital work had to cease, as the enemy had taken possession of a hill some 500 yards from it, and were opening a heavy rifle fire on our mounted infantry, who were passing in detachments on the further side of the hospital. As the rifle fire swept through the hospital tents the position became untenable, and it was necessary to remove the wounded to a place of safety. Accordingly the most serious cases were placed in ambulances and hospital waggons, those who could walk did so, and the remainder were carried by the R.A.M.C., officers and men on stretchers. The hospital tents had to be abandoned. By the time the tents were evacuated it was getting dusk, and after carrying the wounded a distance of between two and three miles it became necessary to bivouac in the open. A serious misfortune had occurred earlier in the day—the loss of the hospital watercart, which had been captured by the enemy, when

sent to fill at the river. The following figures show the number of men treated in this hospital during the week ending February 23rd.

Admitted.—Officers 15, of whom 13 wounded.

Men 267, of whom 231 wounded (12 deaths.)

Of these, 5 officers and 136 men were sent to the nearest stationary hospital, others were discharged to duty, and 90 wounded men remained well enough to proceed to the base. As regards the nature of the wounds (all rifle wounds), the following are the details:—

Wounds of head, face, and neck	25 (1 fatal).
„ chest	16
„ abdomen	15 (6 fatal).
„ upper extremities ...	84
„ lower extremities ...	88

With reference to the antiseptic treatment of wounds in these field hospitals this is what was done. As the cases reached the field hospitals they were quickly examined. When the wounds were slight, and the original dressings which each soldier carried with him, clean and well applied, as happened in a large number of cases, they were not disturbed. If displaced, blood-stained, or otherwise soiled, they were removed. The wounds were then thoroughly washed with perchloride solution, 1 in 1,000, covered thickly with sal alembroth wool, and firmly bandaged. In two cases of perforating wounds of the head, in which a Mauser bullet had entered at the vertex, passed downwards and forwards through the brain, the orbit and hard palate, in both of which there was extensive extravasation into the orbit, boric dressings were applied, and when the patients left for the base they were perfectly conscious and rational, and free from head symptoms. In the same way a number of penetrating wounds of the abdomen recovered completely under antiseptic dressings without laparotomy, and the experience thus gained led the surgeons to believe that symptoms of internal hemorrhage alone called for immediate operation. Thus the more closely we examine into the work of the R.A.M.C. in the present campaign, the more complete do we find the answer to be to the hostile criticisms levelled against it before the war began.

The testimony alike of the distinguished civil surgeons I have named, of the officers of the army, and of the representatives of the nation in the House of Commons, shows that whatever may be said of other scientific branches of the service, the R.A.M.C stands acknowledged as having been throughout thoroughly efficient. We owe it both to those who have lost their lives in its service, and to those who remain, to make this acknowledgment.

THE RÖNTGEN RAYS.

The use made of the Röntgen Rays in surgical practice at the present day affords a striking example of the manner in which our profession is not only a progressive one itself, but is ready at once to take advantage of progress made in any of the ancillary sciences. It was in 1895 that Röntgen, Professor of Physics at the University of Würzburg, discovered the X Rays. He was at the time engaged in experiments with fluorescent phenomena connected with electrical discharges in vacuo, and he found that many substances showed fluorescence when placed inside a glass tube from which the air has been partially exhausted, and many also showed the same when placed outside in the air and within the field of the rays emitted by the tube. Röntgen found that fluorescence was caused when the substance was spread over a piece of cardboard and held near the tube so that the rays were obliged to pass through the card.

He also found that the rays were absorbed or obstructed in a greater or less degree by any other substance placed between the tube and the card. Paper, wood, and other vegetable substances were transparent or permeable; the metals, on the other hand, were very opaque. The hand, when held between the tube and the card, also cast a shadow, but the bones appeared darker than the flesh surrounding them—bone was more opaque or less permeable than soft tissues. This fact immediately gave the discovery a practical surgical value. The subject was eagerly taken up by the profession, and it was found that not only could foreign bodies easily be seen, but that there is no part of the body where fractures or dislocations could not be detected, and that the presence of splints, bandages, and dressings, even of Plaster of Paris, does not hinder their examina-

tion with the X Rays. Arthritic joints, ankyloses, diseased vertebræ, and calcified arteries can also be demonstrated, as well as hip disease and malformation of the pelvis, and, in fact, any abnormality of the bony structures. It goes without saying that these X Rays must prove of great use in the surgery of modern warfare, not only by the detection of a bullet's situation, but by the light thrown upon the bone injury which is so often present in gunshot wounds, and so we find that in March last the surgeon to one of the largest hospital ships lying in Durban Harbour reports that having keenly felt the want of the X Rays apparatus, application was made to the Principal Medical Officer, who immediately ordered a complete outfit for the purpose to be placed on board. A first saloon cabin was fitted up as a dark room, and when all was ready some excellent skiagraphs were taken and developed, and had proved of the greatest use, especially in shell wounds, as with their aid the presence of small particles of shell had been ascertained and their position located, thus enabling the surgeons to cut down and remove them with the least possible delay and danger to the patient.

THE PROGRESS OF PHARMACY.

The progress of Pharmacy in recent years has been very great and decided, as may be seen not only by a comparison of the Pharmacopœia of 1898 with its predecessors, but also by mentioning such products as ethyl chloride and eucaine, so largely used now-a-days for producing local anæsthesia. For many years the late Sir Benjamin Richardson, who was a skilled chemist, as well as an able physician, carried on experiments with the hope of discovering an anæsthetic suitable for cases in which for any reason it is desirable to avoid giving chloroform or ether, and at the same time to secure to the patient freedom from pain during the operation. The mortality from chloroform inhalation which is found by reliable statistics to amount to 1 in every 2,200 inhalations, and from ether, which is still 1 in 15,000 administrations, led him to devote years of patient research to a problem which he was not able fully to solve; but in recent years the introduction of ethyl chloride for small operations such as opening abscesses, teeth extraction, etc., and

the use of eucaine for even much larger operations, have gone far to solve the difficulty. In the *Lancet* for March 31st, 1900, Mr. Vincent Jackson, of Wolverhampton, has recorded a case in which he did a suprapubic cystotomy under local anæsthesia, produced by injecting over the line of incision 40 minims of a seven and a half per cent. solution of hydrochlorate of Eucaine, equal to about two-thirds of a grain of the drug. During the operation the forefinger of an assistant was passed into the rectum to raise up the floor of the bladder. When all was completed the towel was removed from the man's face, and he was asked if he felt anything, to which he replied, "I felt a finger in the fundament." Evidently he had not felt the operation at all—a good example of the completeness of the local anæsthesia produced by eucaine.

With respect to the progress shown by the 1898 edition of the *British Pharmacopœia*, it may be noted that the late Sir Richard Quain, F.R.S., the distinguished President of the Medical Council from 1891 until his lamented death in 1898 (and who was also a highly valued and beloved Irish physician practising in London), took a strong personal interest in its preparation, and that it was largely due to his influence, aided by a representative committee of the Pharmaceutical Society, that such a decidedly progressive spirit was shown in the changes made in it, both in the omission of obsolete preparations and the introduction of new ones. The convenience both of medical men and of dispensing chemists has evidently been considered in the introduction of greater uniformity of dose, especially in the tinctures, in the recognition of some convenient substances in common use but not hitherto officinal, such as the concentrated infusions, and in the omission of a considerable number of drugs which experience has shown to be useless. The Pharmacopœia Committee have also made many textual alterations. Indeed, there is hardly a paragraph of the old Pharmacopœia which has not been re-written. The nomenclature of official chemical substances has been made more exact; the methods of preparation, where these are matters of common knowledge, have been omitted; and the tests for purity have been much amplified and explained. The appendices on tests have been re-written, and instead of, as formerly, the paragraphs describing

each substance being followed by a list of preparations containing it, these are all now relegated to the index, and thereby much space is saved. The index itself is not only an index, but also an epitome. Besides giving the reference it also adds the dose, and the proportion of chief ingredients in consecutive columns.

The compilers of the new Pharmacopœia have also done their best to hasten the adoption of the metric system, though they confess themselves unable to do more than give both measurements in each instance, since British chemists use both systems indiscriminately. Lastly, the authorities of the Medical Council, which originally framed the *British Pharmacopœia* out of the three local Pharmacopœias of London, Dublin, and Edinburgh, show themselves anxious to continue the process and produce an *Imperial Pharmacopœia*, and hence they publish in one of the appendices to the present work alternative preparations sanctioned for use in India and the Colonies.

In a number of matters of detail, which it is impossible to enumerate here, improvements have also been introduced, and there can be no doubt or question that the *British Pharmacopœia* is now a more useful work than it has ever been before.

The practical work of the pharmacists has also advanced rapidly, and the series of tabloids introduced by Burroughs, Wellcome and Co., of London, may be said to mark the high-water point of pharmacy in the present day for beauty of appearance and reliability of ingredients. No one can use, for instance, their beautiful ophthalmic discs or their hypodermic tabloids without feeling how much superior these are to the old solutions. Then, in regard to tabloids for internal use, we find that attention is paid in preparing them to the purposes for which the contained drugs are used. Thus tabloids for general administration are compressed so as to disintegrate immediately, while those intended to exercise a local action, as upon the throat, are so prepared that they dissolve slowly and secure the prolonged application of a concentrated solution of their constituents. Tabloids containing drugs of unpleasant taste are coated with a thin film of white sugar, which is readily soluble in the stomach, while those intended to act only after leaving the

stomach are coated with keratin, soluble only in the alkaline secretions of the intestines.

The introduction of animal extracts, chief among which may be named the thyroid gland extract, from which such excellent results have been obtained in myxœdema, cretinism, and other diseases, is another instance of recent pharmaceutical advance, while every year brings a host of new chemical compounds which, under such names as Aristol, Duotal, Euphoren, Iodotrin, Protargal, Phenacetine, Piperizaine, Tannalbin, Tannigen, etc., at least give evidence of the activity of the chemists, whatever the ultimate judgment may be of the permanent value of many of them.

It is just as well to recognise that it is to the evolution of the pharmaceutical chemist from the old apothecary that we owe the immense improvements in pharmacy which have taken place in our days. If we trace the history of our Pharmacopœia, for instance, from the first one issued by the Royal College of Physicians of London in 1618, we find that at that time it simply reflected the position in pharmacy which had been attained by the Greeks and Arabians, for a large number of the formulæ contained in it were taken from the works of their leading physicians. The catalogue for this first Pharmacopœia contained 1,254 articles, for which the apothecary of that day was liable to be called upon. In 1632 not fewer than 180 simple and 27 compound waters were officinal, while there were formulæ given for 80 syrups and preparations of honey, 46 plasters, and 55 ointments, exclusive of sundry oils. The Pharmacopœias of the eighteenth century showed a marked advance in both pharmacology and pharmacy. Chemical products increased in number, and the account of their methods of preparation kept pace with the advancing knowledge of chemistry. Almost all the substances of animal origin disappeared, and the electuaries, powders, and other preparations containing a large number of ingredients were replaced by the simpler infusions and extracts.

In the first Pharmacopœia of the nineteenth century there were indications of a coming change, which greatly added to and altered the duties of pharmacists. Previously only the mode of preparation of the various substances had been given, but in the Pharmacopœias of the London College, published in

1809 and 1824, a few details were added with regard to the sp. gr. which some of them should have. It was not till 1836 that short descriptions of chemical substances were given in the *Pharmacopœia* by which they might be recognised, and by which, to a certain extent, their freedom from adulteration might be ascertained. In 1836, also, several alkaloids were made officinal. In 1851 a further step was taken, and the compounders of medicines were furnished with an official description of the vegetable as well as some of the chemical drugs. In the production of the *British Pharmacopœia* of 1864, issued by the General Medical Council, the aid of the Pharmaceutical Society was sought, and a very great advance was made in the value and completeness of the tests and descriptions given. The tests and descriptions were more stringent and exact in the edition of 1885, and in that of 1898 an advance of the greatest importance to pharmacy, as well as to medicine, was made. There can be no doubt that, as time goes on, the pharmacist will more and more need a thorough education in physics, chemistry, and botany, as well as in those histological methods which are being increasingly used for the detection of the sophistication of vegetable drugs.

MEDICINE AS AN ART AND MEANS OF LIVELIHOOD.

We have seen that in each of its three great divisions of Physic, Surgery, and Pharmacy, our art has advanced in knowledge in recent years by leaps and bounds; but when we come to consider it as a profession by which its members have to earn their livelihood, we fear a very different story will have to be told. It is true that in each of the three capital cities, London, Dublin, and Edinburgh, and some of the provincial ones, large fortunes are still to be made by leading men in each branch, which greatly impress the public with the idea that the medical profession is a very money-making business, and that questions of fees are of very secondary interest to it. No doubt, this idea has been fostered by the proper disregard shown to merely selfish considerations when such subjects as sanitation, preventive measures generally, and the education of the people in all matters pertaining to health come under the notice of the profession. The Public Health Act of 1875, for example, and the various Acts amending

that excellent measure, would in many places have remained an absolute dead letter if it had not been for the campaigning of medical men, other than those appointed under the Act, in favour of sanitary reform. Such campaigning has often been in the highest sense altruistic, for apart from the obvious consideration that improvement in sanitation means a decrease in illness, and consequently, in professional fees, the mere fact that sanitary reform means an increased local rate is sufficient, in too many cases, to decide the ignorant and obstinate against having any dealings whatever with a person who advocates such costly new-fangled ideas. The sacrifices which have been thus laid by individual medical men upon the altar of public benefit amount in the aggregate to a great deal, and certainly exceed those which any other profession has ever made, and so far as the public health is concerned, these sacrifices have, in England at least, not been made in vain. They have transformed the England of last century, groaning under the weight of infectious diseases and frequent pestilences, into the England of to-day, where the death-rate of our largest cities compares favourably with that of the sunniest clime, and where efficient drainage and refuse disposal, together with an abundant supply of pure water, and progressive precautions against the spread of disease, reflect themselves in the improved health, happiness, and working capacity increasingly apparent in each succeeding generation. If it were possible, which it is not, to appraise the services thus rendered by our profession to the public, in coin of the realm, it would be seen at once how well medical men who labour for the public health deserve to have a fair remuneration secured to them. But one or two illustrations may be given from actual life of the money value of medical services rendered to individual bread-winners. A man in the prime of life, earning £300 a year, became the subject of cancer, which as soon as it was distinctly diagnosed, was excised. During the next six months two other operations were needed for the removal of glands, and after the last he remained for ten years, and up to the time of writing, free from disease. He has thus been enabled to earn already £3,000, and his gains are not yet complete. Had he died, his children would have had to seek refuge in orphan asylums.

A man, aged fifty, earning £1 a week, was attacked with glaucoma, which, if not promptly and efficiently treated, threatened to deprive him altogether of sight for the ten or fifteen years he might expect to live; he applied to an Ophthalmic Hospital, where an operation was successfully performed, and he was enabled to return to his work, and continue to earn his £1 a week, which in the course of ten years would amount to £520.

If would, of course, be unreasonable to expect that in either of these cases the surgeon who performed the operation should be paid in proportion to the £3,000 or £520, respectively, which his patient subsequently earned or might have earned, but, on the other hand, it should be remembered that the labourer is worthy of his hire, and that if the public of all ranks of society kept this fact better in mind, as regards the profession, we should hear less of hospital abuse, sweating of doctors by medical aid societies, Irish dispensary doctors' grievances, the battle of the clubs, and other burning questions of medical politics which have come to the front so much of late years, and which show better than almost anything else can, the conditions with which that large portion of our profession engaged in general practice have to contend at the present time.

The subject of hospital abuse has been so thoroughly thrashed out in the medical journals that it is difficult to write anything new about it, and it would certainly be waste of time to go over again the facts which prove its existence and extent. But during the last few years enquiries have been made among a number of general practitioners practising in and around London as to the effect which the hospital out-patient system has on their practices, and from the replies received it appears that there is a general agreement that it is very prejudicial—(1) by treating patients who can afford to pay the small fees asked for in many of the districts, or who could join provident dispensaries; (2) by the absence of adequate enquiry into the social circumstances of patients; (3) by the treatment of trivial complaints; and (4) by depriving the general practitioner of those cases, the treatment of which would be of service to him in maintaining his professional efficiency. One general practitioner in the East End of London writes that out-patient departments compete with the general practitioner by taking from him his bread and

butter, treating gratuitously those well able to pay for medical attendance at home. Another from South London writes that a large number of working people in that part of London pay for medical attendance at the rate of one shilling for medicine at the doctor's surgery, and one shilling and sixpence for a visit and medicine. If they can get free advice and medicine at a hospital of course they will go there, but he finds that they will not put themselves out to go. In bad weather they send for the general practitioner, or go to him for medicine. In fine weather they all flock to the hospitals. Another from the S.W. district writes that minor surgery is almost unknown in his practice beyond opening an abscess, extracting a needle, or stitching up a cut, and even these small operations are very rare. Circumcisions and removal of tonsils all go to hospitals. Where a fee of a shilling is charged, he says, as at some hospitals, it is in direct competition with the general practitioner. One shilling, he adds, is his own most frequent fee for consultation and medicine. When it is remembered that one million and a half of persons are reported to be treated at the London hospitals, general and special, it will be seen what difficulties general practitioners who are even willing to accept such low fees as 1s. 6d. for visit and medicine, and 1s. for consultation and medicine, have to contend with in earning a living, for it is quite incredible that in the richest city in the world one out of three of its inhabitants should be unable to pay such modest fees as these.

THE IRISH POOR LAW MEDICAL SERVICE.

The grievances of Irish Poor Law Medical Officers have been summarised in a Report by the Irish Medical Association, dated January, 1899, from the Royal College of Surgeons, Ireland, the College having kindly (*O si sic omnes!*) lent the prestige of its name, and given the use of its premises, in order to serve the interests of its many licentiates who are in the Poor Law Service of Ireland. The abuse of tickets is foremost, tickets being issued generally without inquiry, often without necessity, and always without responsibility. Practically they are given to every applicant. Poor Law Guardians and other members of Dispensary Committees issue tickets for attendance

on members of their own families. Thriving shopkeepers, farmers of 100 acres of land, persons with many hundreds of pounds on deposit in bank, earners of income up to £3 a week, well-to-do pensioners and such like people, get visiting tickets without question and present them without shame. Judge Kane had during the previous year denounced the system from the Bench. The travelling expenses are another source of complaint. The average salary paid to an Irish dispensary doctor is £108 a year, with some extras for vaccination, registration, and sanitary work. The doctor has out of this to pay his own travelling expenses, although his salary alone is not sufficient to provide him with the bare necessities of life, and in many districts there is not much private practice to be had. He is the only civil servant who has to pay the travelling expenses incurred in the discharge of his public duties. The District Inspector of Police in Ireland, for instance, receives £95 a year for a horse, a sum equal to the year's salary of many a dispensary doctor. The annual vacation is another matter in which the dispensary doctor's lot compares unfavourably with that of civil servants generally. Though he has to work day and night, Sundays and holidays, he could, until recently, look forward to no annual leave of one or two months such as is enjoyed by those whose work is much easier. On this point, however, some concession has been made by the order of the Local Government Board, and though the guardians in some places have tried to oppose it, the Board will, no doubt, uphold its own order.

THE SCOTTISH POOR LAW MEDICAL SERVICE.

Bad as the case of the Irish dispensary doctor is, that of his Scotch brethren in remote parts of Scotland appears from some recent examples to be far worse.

For a Poor Law district with a population of 6,000, scattered over an area which is more than 35 miles long, and which is intersected by numerous branches of the sea and lochs, and includes three islands, to be attended by only one medical man, shows that either the inhabitants must be very healthy, or that the medical man must have almost superhuman strength and

patience. In one case on one of the islands forming the Hebrides, the medical officer was called to attend a female patient suffering from typhus fever, for whom he had to perform nearly all offices. He sent food for her from his own house, and he had to put her in her coffin when she died. He then took the disease himself and died, leaving his widow and family to fight their own battle. In another case, in which Mr. Lamont was the medical officer, the patient, from the beginning of her illness on August 8th until her burial on the 25th, was left absolutely alone but for her medical attendant. Relatives and neighbours neither visited her while she lived, nor assisted to bury her when she died. There was no nurse to be obtained, and no one but the medical officer to give her even a cup of cold water, and he had, besides attending her, to give medical attendance also to all the sick over his huge district, and having done so, and done the best he could for each and all of them, he found himself liable to be dismissed without appeal, and was in fact dismissed, by his local authority on any plea of informality or irregularity in carrying out his duties that seemed sufficient to a clique of sectarian or prejudiced members of the board, from whose decision there is no appeal in Scotland, as there is in England and Ireland, to the Local Government Board. Through the attention drawn to Mr. Lamont's case by the Parliamentary Bills Committee of the British Medical Association, and by questions in the House of Commons, it has been shown how insufficient is the medical attendance provided in the Hebrides and in the Highlands of Scotland generally, in some of the parishes of which half the deaths are uncertified by medical men. In the County of Inverness, for instance, 2,272 persons had gone to their graves without any medical man attending them in their last illness. In few parishes is there an isolation hospital or a trained nurse, although several of the outlying islands are the homes of typhus fever. Lewis, for example, is one of the sources from which the typhus epidemics of Glasgow are constantly supplied. It is evidently quite too absurd to suppose that medical officers of the Poor Law should be ready to do the work both of hospital nurses and undertakers as well as their own, and yet be liable to dismissal for some trifling omission or neglect of red-tape routine by a sectarian clique of their local authority.

MEDICAL DEFENCE.

The position of the subject of Medical Defence illustrates in another way a very weak point in medical professional life in the present day. It has been found by experience that medical men are far more exposed than those belonging to other professions to the attacks of designing persons—hysterical or otherwise—who attempt to blackmail them by threatening an action at law for some supposed injury or malpractice, and that the defence of such an action, even though it result in a triumphant acquittal, usually lands the victim in ruinous legal expenses, which he has hardly any chance of recovering from his opponent. It has also been found that in certain English districts quacks of all sorts abound, and practice upon the credulity of the public to its great detriment, and also so as seriously to interfere with the practices of those whom alone the law recognises as legally entitled to treat disease. To prosecute these fellows is a troublesome and expensive undertaking, which many practitioners hold that the General Medical Council should do for them, but which the Council, not being to any large extent representative of that portion of the profession which feels the competition of these quacks, has almost always declined to do. Consequently, two Medical Defence Societies have been formed, one having its headquarters chiefly in and around Birmingham, and the other principally in and around London and the home counties, which have doubtless done good work in keeping attention directed to the subject by bringing cases before the Medical Council, and also by occasionally originating prosecutions in very flagrant cases. It is felt, however, very strongly by many members of the profession interested in the subject, that this is especially a case where union is strength, and efforts have been made, hitherto without success, to procure a union of the two societies into one. Personal jealousies on the part of some of the officers of both societies seem to have had more to do with the failure of negotiations for amalgamation than disinterested effort to promote the general advantage, and it remains to be seen whether, since they cannot agree to unite, and cannot separately do anything like the good work they could unitedly, the double work of collective defence of the profession

against quacks and the individual defence of its members against blackmailers, may not be taken out of their hands by its adoption by the British Medical Association. It is now about a dozen years since this course was urged on the Council of the Association by a representative committee of its members, including some from England, Ireland, and Scotland, and the deputation which had an interview with the Council were assured by its President that the Council were in hearty sympathy with their object, but would have to enquire whether there were not legal difficulties in the way. On enquiry it was found that there were certain legal difficulties, and counsel's opinion was obtained which seemed at the time to prevent the Council taking action on account of its Memorandum of Association; which had been registered under the Board of Trade, not specifying such work as Medical Defence as a part of that for which the Association was formed. Since then, however, it appears that an Act has been passed which renders it quite easy to procure the needed change in the Memorandum and Articles of Association, all that is required being an application to the Court showing that the members of the Association desire the change. At two recent annual meetings of the Association resolutions have been passed almost unanimously, requesting the Council to take the necessary steps to bring the matter before the Courts, and there can be very little doubt that however long the more Conservative members of the Council may resist, the will of the majority will ultimately prevail.

Another matter which throws a useful side-light on the condition of a considerable portion of the medical profession in England and Ireland is to be found in the reports of the various charitable societies which aim at relieving cases of pecuniary distress among medical men, their widows and orphans. Of these there are three having their headquarters in London, besides several in the provinces, and one in Dublin. As the number of those relieved by the London societies alone amounts to between 450 and 500 every year, and as there are always far more applicants even for doles of £5 or £10 a year than can be satisfied out of the funds at the disposal of the various societies, it is evident that in the battle of life but too many practitioners and their families come to grief. The Irish Royal Medical

Benevolent Fund, founded by the late Dr. Kingsley in 1842, has similar aims to the English societies, and by the favour of the Irish colleges holds its meetings either in the Royal College of Surgeons or the Royal College of Physicians.

THE BRITISH MEDICAL ASSOCIATION.

On the other hand, the continued progress and consolidation of the British Medical Association presents the most encouraging symptom connected with the condition of the medical profession in our times. Started originally about 65 years ago as a small provincial society at Worcester, it has become in our day the great representative body of the profession. It numbers now some 18,000 members, and its branches are to be found, not only in England, Ireland, and Scotland, but also wherever British medical practitioners live—in Adelaide, South Australia, Barbadoes, Bermuda, Bombay, Brisbane, Queensland, British Guiana, and British Columbia, Burmah, Cape of Good Hope, Ceylon, The Deccan, Gibraltar, Grahamstown, Griquiland West, Nova Scotia, Hong Kong and China, Jamaica, Leeward Islands, Malay, Malta, Channel Islands, Canada, Melbourne, New Zealand, the Punjab, Sydney and New South Wales, Trinidad and Tobago, while its members not belonging to branches, in the Indian Medical Service and the Army and Navy, are found in every quarter of the civilized globe. Its *Journal*, with a circulation of 21,000 each week, is certainly one of the most influential medical papers in the world. Its Parliamentary Bills Committee, on which there are representatives from most of the branches in the United Kingdom, is constantly engaged in watching all Bills affecting professional interests which are introduced into either House of Parliament, and in making representations to those in power on subjects such as the Army and Navy Medical Services, the Registration of Midwives, the Notification of Infectious Diseases, and the grievances of Irish Dispensary Doctors. The present Chairman of this Committee, Dr. Farquharson, M.P., being himself in the House of Commons, is able to render most efficient service to his profession there, because it is well known in the House that he has a powerful association of medical men behind him. It cannot, of course,

be expected that in such a large Association there will be unanimity on every question affecting professional interests, and the Midwives' Bill of the present year has shown how much divergence there is between those members who advocate and those who oppose the registration of midwives. All are probably agreed that the Sarah Gamps and Betsy Prigs, whom Dickens satirized, should disappear, but the great difficulty and real crux of the whole matter has been to know how, if in future those who professed to be midwives were compelled to be better educated, it would be possible to avoid giving them such a legal recognition of their skill and knowledge as would lead the public to believe that they were a sort of inferior medical practitioners. Many members of the Association thought it would be best for the body to leave the matter alone, while others thought that as the matter was being taken up by the House of Commons it was best to try and influence legislation rather than stand altogether aloof, and this division of opinion has chiefly resulted in paralysing to a large extent the Association's influence on this important subject.

On the subject of Medical Defence, too, there has been, as we have said above, some difference of opinion as to whether the Association should undertake the duties of Medical Defence, charging its members an extra 5s a year for the purpose. Some few contend that to do so would be an approach to trades-unionism, which they maintain would prove detrimental to the scientific interests of the Association. In all free societies such differences of opinion are inevitable, and what the governing body of such societies has to do is to find out the wishes of the great majority of its constituents, and act accordingly. There are, however, it may be said in passing, certain changes required in the governing body of the Association itself (the Council) in order to make it more truly representative of the present-day life of members of the Association generally. In the first place, it should be made representative, not only of the branches of the Association, as at present, but of all its members in the United Kingdom, whether these belong to any branch or not. It is quite clear that as it is the governing body, not of the branches only, but of the whole Association, the principles of representative government require that each member of the

Association who pays his guinea should have a voice in the election of the Council which spends that guinea—instead of which those who elect the Council do so really in virtue of their payments as members of the branch to which they belong—payments which vary from 2s. 6d. to 4s.—the result being that thousands of members of the Association in the United Kingdom have no voice whatever in the election of their governing body. Thus, in the Metropolitan Counties Branch District there are over 1,500 members who have no vote, as against 1,149 who have. In the South-Eastern Branch there are 654 with no vote, as against 581 with votes. In the Dublin Branch there are 194 without and 167 with. In the Glasgow and West of Scotland Branch there are 420 without and 300 with. Altogether, of the 15,000 members of the Association residing in the United Kingdom, there are nearly 6,000 members, or considerably more than one in every three, who have no voice in the election of their Council, though they can and do attend, speak, and vote at the annual meetings of the Association. It is easy, of course, to say that they should join their respective branches if they want to have votes; but the fact will have to be recognised sooner or later that it is a serious weakness to the whole body that one-third of its members should be without representation on the governing body, and that in other ways the present branch system works badly, giving opportunities for the formation of cliques in the branches, who return themselves or their friends to serve on the Council or the Parliamentary Bills Committee year after year, to which system may partly be traced the friction which has repeatedly arisen between the Council and the independent members of the Association at the annual meetings. If the Council were elected by a majority of the members resident in each branch district, it is probable that some of this friction would cease; but in any case there would be an easy answer to all objectors: "You have the remedy in your own hands, and if your representatives on the Council don't do as you wish, you can turn them out and put others in." It seems no part of the duty of the present writer to suggest how this should be done; but a simple mode of procedure would be to abolish the extra subscription to the branches and let the necessary expenses of each branch, duly certified, be

paid by the parent Association, every member residing within the district of the branch being then considered a branch member for the general purposes of the Association.

The size of the Council should also be reduced. At present it consists of 4 *ex-officios* (President, President-elect, President of Council, and Treasurer), 22 Vice-Presidents elected for life, and 79 Representatives of Branches, over 100 in all—a number quite too large for administrative purposes, and which should be reduced to one-half, either by dropping the Vice-Presidents out of it and joining some of the smaller branches with others for the election of representatives, or by taking some clear principle for guidance, such as one representative to every 300, 400, or 500 members of the Association. With a Council reconstituted in either of these ways, and dependent, as all representative councils should be, on the direct vote of its constituents for annual re-election, it is extremely improbable that we should see a repetition of what has occurred about Medical Defence, when year after year the Annual Meeting voted almost unanimously that the Council should take the matter up, and year after year the Council declined to carry out the members' wishes, and treated the resolutions passed at the Annual Meeting as if they had been so much waste paper. The bugbear of trades-unionism, which seems to have largely influenced the Tory majority of the Council cliques in resisting the general wishes of the members, is one which only needs to be examined in the full light of knowledge to disappear like many another ghostly apparition. There is, it is true, a trades-unionism which should be avoided by all honourable men, which consists in the tyrannical oppression of workmen belonging to the same trade by their so-called leaders, compelling them to come out on strike, and often to starve with their families, because the officials of their union, who are often the chief benefitters by the strike, have decreed that they shall do so; but in its simpler and far more beneficial form trades-unionism means the combination of those belonging to a particular occupation (and why not also a particular profession?) for their mutual advantage. Without such a combination it would have been impossible for the Cork medical men to have led the way in what has come to be known as "the battle of the clubs," which has since been waged with

varying success at Lincoln, Stockport, Wigan, Nottingham, Eastbourne, and Inverness. The result in the last-named place is instructive as to the power of such combination. The medical men of the town formed a union, and all agreed not to accept clubs except on certain terms, the chief of which were the payment of a fee of half-a-crown for examination of every candidate for admission, whether passed or not, the fee to be paid by the club; the sum of two and sixpence per head, per annum, to be the minimum payment for attendance, and not to include medicines, and the refusal to have women admitted (or a married members' branch) on any terms. The clubs refused to agree to these terms, amalgamated, and, in the end, gave the very terms they had refused to their old medical officers to the new.

It is also worthy of note that while many in high places of our profession here have been repelled by the mere thought of an approach to trades-unionism, which seems to act on them like the proverbial red rag on a bull, professional men on the Continent do not hesitate for a moment to follow out all its methods. At Brussels, a few years ago, a successful stand was made against the abuses of sick-clubs. A medical union was formed, which numbered 430 out of the 450 or 500 practitioners in that city. When the clubs got an outsider, he found himself boycotted by the union, which made his position so unpleasant that he was soon glad to give up the clubs and join the union. In France, also, a sort of Ethical Society has been formed with similar aims, and the various medical unions have formed a National Federation. The present year will also witness, at Paris, the assembling of the First International Congress of Medical Ethics, which is intended to deal with all questions of the relations of medical men to the State, to municipal bodies, or to other collectivities such as clubs and dispensaries, on the best trades-union lines. The profession in this country, and the leaders of the British Medical Association in particular, will, doubtless, learn some instructive lessons from countries in which the principles of unionism have been practically carried out by medical societies for years. A mere enumeration of the names of medical societies in this country which deal, more or less, with the interests of sections of the profession, and other ethical

questions, such as the British Medical Association ought to be specially qualified to deal with, will show what waste of energy goes on at present, and what need there is for concentration of our forces under one strong body. They are *inter alia*, the Medical Defence Union, the London and Counties' Medical Protection Society, the Hospital Reform Association, the East-bourne Provident Medical Association, the East Suburban Medical Protection and Medical Ethical Society, the Lincoln Medical Society, the Brighton Hospital Reform Association, the Manchester Medical Guild, the Wigan Medical Guild, the Colliery Surgeons' Association, the Stockport Medical Society, the Ashton-under-Lyne and District Medical Society, the Nottingham Medical Union, the Coventry Medical Service, the Weston-Super-Mare Provident Medical Association, the County of Durham Medical Union, the Small Heath Medical Provident Club, the Manchester and Salford Provident Dispensaries Medical Officers' Association, the United Kingdom Police Surgeons' Association, the Cork Medical Profession Association, the Poor Law Medical Officers' Association, the Gateshead Medical Association, the Newcastle-on-Tyne Medical Ethical Society, the South Shields Medical Practitioners' Association, the Middleborough Medical Association, the Battersea and Clapham Medical Service, the Eastern Valley Medical Association, the Incorporated Medical Practitioners' Association, the Beckenham and Penge Medical Society, and the South-West London Medical Society.

If the ruling spirits on the Council of the British Medical Association were to show a willingness to undertake the duties of medical defence, as desired by a large majority of its members who attend the annual meetings, there is little doubt that a large number of these small societies might gradually be absorbed into it, and worked far more effectually through branches or committees of the present Association than they are at present. With regard to the Parliamentary Bills Committee, its usefulness to the profession would be greatly increased if it had more medical members in the House of Commons to take part in discussions on such subjects as Vaccination, the Midwives' Bill, the Certification of Deaths, and similar measures, and some of the very large profits derived from the *British Medical Journal*

might well be devoted to paying sufficient salaries to three medical men, one from England, one from Ireland, and one from Scotland, to enable them to seek a seat in Parliament, and to maintain them when there. They might rank as President and Vice-Presidents, or Chairman and Vice-Chairmen of the Parliamentary Bills Committee, and their retention of the salaries might be made dependent on their retaining their seats. It is quite certain that far more respect would be paid to representations made by the Council or the Parliamentary Bills Committee, if it were known that they had several members in the House ready and willing to back them up.

Those who remember what good work has been done in the House of Commons both in the past and in our own time by Wakley, Brady, Lush, Farquharson, Cameron, Foster, and Priestley, will know how necessary it is that if our profession is to exercise its just share of influence upon legislation, means should be taken to keep up the supply of medical legislators, a matter which the increasing expenses attendant on a seat in Parliament render more and more difficult every year.

THE GENERAL MEDICAL COUNCIL AND ITS WORK.

The constitution of the Medical Council has for many years been a source of dissatisfaction to the great body of the profession, who, though they provide the funds which it administers, had no representation on it until the British Medical Association, after much persistent agitation of the subject in and out of Parliament, secured for us the five direct representatives, who, though so few in a council of thirty, have done much good work, and fully justified their existence. Among the most recent matters in which they have been prominent has been the suggestion of a Conciliation Board, brought forward by Dr. Glover, one of the direct representatives, with the object of bringing about more amicable relations between the Medical Profession and the great Friendly Societies. It is admitted on all sides that the terms on which medical men contract to do the work of many of these societies is not satisfactory, and that the payments some of them receive for their services is very inadequate. There has been a good deal of friction between the two parties of late years, and the representatives of the societies are as anxious to put an end to this state of things as

the profession can be. A conference was therefore arranged between the representatives of 33 Friendly Societies, with an aggregate membership of $3\frac{1}{2}$ millions, and a capital of 23 millions sterling, on the one hand, and a Committee of the Medical Council, presided over by Dr. Glover, on the other, at which it was agreed to propose that a Conciliation Board should be formed, to consist of representatives of the Friendly Societies and of the Medical Profession, which it was hoped would do much to remove the misunderstandings that had hitherto existed. The way in which the Medical Council had been led to take the matter up was this: In 1897 several memorials were received by the Council on the subject of Medical Aid Associations, among which was one from medical men at Norwich, which expressed the desire of the memorialists to have the opinion of the Council on the question of professional intercourse with the medical officers of the Norwich Medical Institution. At a meeting of the profession in Norwich a committee had been appointed to consider the relation of the Medical Institute there to Medical Aid Associations, and the Committee reported that the Institute was a trading body conducted by laymen for affording medical attendance in return for a small annual payment (three shillings), only a portion of which was paid to the medical officers, the remainder going to defray the working expenses, and any balance being appropriated for investment in the purchase of real property. The committee were unanimously of opinion that it is unbecoming and unprofessional for any member of the profession to lend his name, or associate himself in any way with such a society, and their report to that effect was unanimously adopted. The memorialists, therefore, sought the advice and guidance of the Council on the question of meeting in consultation medical men who had undertaken duties on conditions which must be considered derogatory to the profession, and detrimental to the public. A second memorial had been received from the Norwich Medico-Chirurgical Society, praying the Council to take steps to counteract the growing evils of medical aid associations, and of medical institutes. A third communication, which was from the Beckenham and Penge Medical Society, reported the fact that at a meeting of the society it was unanimously resolved that the

holding of a medical appointment to so-called medical aid societies be considered derogatory to the profession and inimical to its best interests. Other communications, bearing on the subject, having also been received, the Council appointed a committee, which, after two years occupied in enquiring into the whole subject, and the causes of friction, receiving deputations from the practitioners of Norwich and Yarmouth, and also, on the suggestion of the Registrar of Friendly Societies from a committee appointed by the leading friendly societies, found that the grievances complained of resolved themselves very much into questions of remuneration, arising largely out of the recent inclusion in the membership of medical aid associations of women and children, who, hitherto, had been generally excluded from the club system, and out of an alleged practice of retaining in the membership of such associations, persons whose means and social circumstances unfit them without injustice to the profession, for receiving the benefits of medical attendance on such terms as are proper for ordinary members. The committee found that there was no disposition on the part of the representatives of friendly societies to deny the reasonableness of much of this dissatisfaction, nor any want of wish on their part that their medical officers should be adequately remunerated. The outcome of these conferences was the proposal for a Conciliation Board, consisting of representatives from both sides to discuss and, if possible, determine the points at issue. It was believed that the creation of such a Board, with the full sanction of the profession, on the one hand, and of the great friendly societies on the other, would be an important step towards the establishment of a better understanding between the two; that it would pave the way for a thorough discussion of all questions in dispute, and might lead to a more adequate payment of medical work, and also to better medical treatment of the members of friendly societies. The Medical Council could not itself appoint any members of the proposed Board, but it was hoped that the British Medical Association, as the great representative body of the profession, might do so. The appointment of these members, however, still hangs fire, the Council of the British Medical Association, when appealed to, having desired to more fully investigate the matter before committing themselves to

anything, and having, therefore, appointed a special Committee for the purpose, which has reported to the Council, from time to time, but does not appear to get any "forrader."

The Conciliation Board, when appointed, will, of course, have only to do with associations composed of members of friendly societies and their families, who belong, with few exceptions, to the industrial classes, and do not employ paid canvassers. But the Committee of the Medical Council also had its attention directed to another class of medical aid associations—viz., those run by insurance or other commercial companies, in which insurance is the principal business, and medical attendance is thrown in merely as a bait. In these it is alleged that wholesale canvassing and touting is practised, and the Medical Council, at Dr. Glover's suggestion, unanimously passed a resolution strongly disapproving of medical practitioners associating themselves with such undertakings.

THE HUNTER CASE.

The case of the prosecution of the late Mr. Hunter shows, among other things, how curiously unfitted some of the Medical Council seem to be for discharging one of the important duties entrusted to them by Parliament in reference to prosecutions, and also how useful the presence of Direct Representatives is even for the defence of the rights of those very bodies whose interests the delegates of the licensing bodies are supposed to look after. The blunder committed by the Council in the first instance in ordering the prosecution of Mr. Hunter L.S.A., and duly registered, who was also the holder of an American M.D. which was unregistrable, would almost certainly never have been committed if the Council as a whole had been aware, as its Penal Cases Committee, on whose recommendation the Council acted, was, or ought to have been, that Mr. Hunter was not an American quack, but a duly qualified and registered medical practitioner. Mr. Victor Horsley, one of the Direct Representatives, has brought out among other astonishing facts of this case, that at the time when Mr. Hunter's case was brought before the Penal Cases Committee, the representative of the Apothecaries' Society was in the chair, and that he actually had it before him in print that Mr. Hunter was a

licentiate of the body which he represented on the Council, and duly registered, and that yet he allowed the Council to be misled into thinking that this L.S.A. was nothing but an American quack, and into ordering his prosecution on that ground. The member in question (who has since by the way ceased to represent the Apothecaries' Society) thought it sufficient answer to say that his being in the chair precluded him from exercising any influence over his two colleagues who formed the remainder of the Committee on that occasion, one of whom moved, and the other seconded, the recommendation of the prosecution. He admitted that the Council had fallen into an error by passing an omnibus resolution that A.B.C.D. and E. should be prosecuted under Section XL., and tried to throw the blame on the Council's legal advisers for having forgotten, or perhaps, not considered, the precise charge against Mr. Hunter of having used his American M.D., and he seems to have thought that he was relieved of all responsibility both for his action as temporary Chairman of Committee, and afterwards as a member of Council voting for the prosecution, in allowing such a *suppressio veri* and *suggestio falsi* to go uncorrected, as led the Council to believe that Mr. Hunter was a quack who ought to be prosecuted.

Whatever their then representative may have thought, however, the Society itself was much exercised over the prosecution of their licentiate, and in October last it addressed a long letter to the Medical Council on the subject, stating that they were advised by eminent counsel that the decision of the judges of the Queen's Bench Division in the Hunter case was an erroneous one; that a perusal of the delivered judgment would show that the reasons assigned by one of the judges for his decision, were based on most imperfect knowledge of the subject, while the other judge, whose observations during the arguments had apparently been favourable to the contention of the Society, eventually decided against it with doubt and hesitation. The decision, it is added, was rendered still more unsatisfactory by the fact that the Medical Council, having issued separate summonses against Mr. Hunter for (1) calling himself a physician, and (2) calling himself a surgeon,—only proceeded in respect of the first of them: so that the case did not come before the court in its entirety, and the right of the L.S.A. (1886) to call himself

surgeon remained undecided. In the opinion of Sir Edward Clarke, Q.C., M.P., and Mr. Haldane, Q.C., M.P., the L.S.A. (1886) is entitled to call himself physician or surgeon, or both, and the Society is justified in so advising its licentiates notwithstanding the decision in the case of *Hunter v. Clare*.

Sir Edward Clarke is further of opinion, that should the question be again raised in a court of law, the decision in the case of *Hunter v. Clare* would not of necessity be held to be a binding authority on this point, inasmuch as the conviction of the appellant was quashed on other grounds, and the opinions expressed by the Court as to the rights of the L.S.A. were, under the circumstances, immaterial to the issue. In view of these facts and opinions the Apothecaries' Society in their letter suggested to the Medical Council that a friendly suit should be instituted to try the right of an L.S.A. to call himself physician or surgeon, or both, and that the expenses of plaintiff and defendant respectively should be defrayed by the Medical Council and the Apothecaries' Society. To this it was objected that the Council had no right to spend the money of the profession on going to law on a matter on which the Council itself did not appear to have made up its mind. It was agreed that a serious mistake had been made in instituting the prosecution in the first instance, but that was no reason, it was maintained, why a second mistake should be made. This view ultimately prevailed with the Council, and the matter was referred to a committee to report upon. The entire transaction, in the course of the proceedings over which Mr. Hunter, who must have been much worried by them, unfortunately died, reveals to outsiders an amount of laxity in the steps taken by the Council authorities in cases of prosecutions, such as without these revelations would have been quite incredible. In the result the Council at this year's May meeting decided against the proposal of the Apothecaries' Society for a friendly suit to get the question authoritatively decided.

THE MIDWIVES' BILL.

The proceedings of the Council with reference to this Bill show once more the necessity of having Direct Representatives on it, and, indeed, of increasing their number, when cases like

this in which the interests of the great mass of the profession are involved, have to be considered and pronounced upon. In the view of a great majority of general practitioners the Bill which has now been before Parliament for several sessions is one calculated to do considerable harm. Even if it provided, which it does not, for restricting to natural cases of labour only the attendance of legally qualified midwives, the mischief likely to ensue would not in their opinion be guarded against, for a natural case of labour, they maintain, requires complete scientific knowledge to diagnose, and one which commences naturally may become urgent and dangerous at any time between its commencement and completion. The Medical Acts which the Council administers, provide that medical men who wish to practise in any one branch of medicine, surgery, or midwifery, must show by their training, and by the examinations which they pass, that they are practically acquainted with all three: and yet the Midwives' Bill, going directly contrary to this principle, proposes to give a State recognition to women who have attained only in one branch to the half-knowledge which is possible to those who have never studied anatomy, who have only had some weeks or it may be months at a lying-in hospital. or who, if they were already in practice on the rule of thumb system before the passing of the Bill, may not have had even that slight opportunity of gaining technical knowledge. The recent action of the Council with regard to the Bill before Parliament may be briefly sketched. At its June meeting in 1899, it reappointed its Midwives' Bill Committee, with the addition of a second Direct Representative, Mr. Horsley, the other Direct Representative being Dr. Glover. This Committee was of opinion that all the members of the proposed Midwives' Central Board should be registered medical practitioners, and should be representative in character of different parts of the country; also that the term midwife should be defined as a woman who, for gain, undertakes to attend cases of natural labour, and who is not registered under the Medical Acts, the Bill as it stood simply defining a midwife as one who undertakes, for gain, to attend women in child-birth. The Committee considered this to be a matter of fundamental importance. It was further of opinion that the rules of the Central Midwives'

Board should not be valid until they had been approved by the General Medical Council, and that the term qualification should be avoided as likely to lead to misapprehension. The Committee also called attention to the imperative necessity of making provision for qualified medical assistance in every case attended by a midwife which presented symptoms of difficulty, abnormality, danger, or disease on the part of the mother or newborn child.

As to the general provisions of the Bill the Committee suggested that the term "licence" should, throughout the Bill, be used for the permission granted by the local supervising authority to practise in a given area, and that the document given by the Central Midwives' Board should be called a certificate, also that provision should be made by Parliament for covering both the general and special expenses which the Council, and any Committee it might appoint, would have to incur in carrying out the provisions of the Act; and the Committee finally recommended that the Lord President of the Privy Council should be informed that they could not approve of the Bill, unless it were recast in accordance with these suggestions. When this Report was brought before the Council, however, the Chairman of the Committee refused to move its adoption on the ground that he disagreed with some of its conclusions, whereupon Mr. Horsley moved its adoption, and the Chairman moved an amendment, which was carried, emasculating the Report on one of its most vital points, that of the constitution of the Central Midwives' Board, and in this form it was adopted and sent to the Privy Council.

In the result the single point upon which the representations made by the Council seem to have had any effect, is that with reference to the necessary expenses being paid by the Exchequer, a Bill to provide for which was introduced into the House of Commons at the end of April, but being blocked by the opposers of the Midwives' Bill was again and again postponed. It was left to the British Medical Association to endeavour to procure amendment of the Bill in Committee, and if any improvement shall have been introduced either then or on the Report stage, it will be the Association, and not the Medical Council, the profession will have to thank for them. As the Report stage

has been fixed for June 27th, it will be impossible to say here whether the Bill has been, or will be materially improved. If passed as it stands at present, it will give legal sanction to the creation of an Order of Midwifery Practitioners of the female sex, who will be enjoined to refrain from attending cases of abnormal labour, or disease in mother or child, but will find that they are subject to no penalty for disregarding the injunction. It will not even place these inferior practitioners under the direct control or supervision of medical men, who are themselves required by the State to undergo prolonged training and stringent tests before practising midwifery, and who are not allowed, on pain of being struck off the Register, to employ male assistants much better qualified than the new female midwives will be, to attend cases for them. The Bill at present only applies to England and Wales, but the Royal College of Physicians of Ireland appears to be desirous that its action should be extended to Ireland. No such suggestion has, up to the present, been made from Scotland—and there cannot be the least doubt that if the English Colleges were at all representative of the general body of the profession, they would have opposed the passing of a Bill so likely to do injury both to the profession and the public.

The following is an abstract of the representations made to Sir Robert Finlay, the then Solicitor-General, by the deputation from the British Medical Association which waited on him between the time when the Bill passed through the Committee on Law, and the time fixed for the Report stage. Sir Robert Finlay, it may be noted in passing, is very well able to appreciate the points raised, having himself received a medical education and become M.D., Edin., before commencing his brilliant career at the Bar.

The principle embodied in the Midwives' Bill, it was pointed out, is contrary to the previous course of legislation on medical matters, the tendency of which has been to increase the stringency of the requirements for the registration of practitioners of medicine, surgery, or midwifery, the Medical Act of 1858 having enacted that any person possessing any one or more of the qualifications described in the Schedule to the Act, should be entitled, according to his qualification or qualifications,

to practice medicine or surgery, or medicine and surgery, as the case may be : while the Act of 1886 repealed this and provided that a person should not be registered under the Medical Acts in respect of any qualification referred to in any of those Acts, unless he had passed such qualifying examination in medicine, surgery, *and* midwifery, as was mentioned in this Act. The Midwives' Bill, if passed, would therefore alter the provisions of the Medical Acts, in a direction contrary to that of the Medical Act of 1886.

On Clause 2 the Association represented that it was of importance to retain the words forbidding women not registered under the Act, from habitually and for gain, attending women in child-birth; a notice to omit these words having been placed on the paper in the House of Commons. The Association further pointed out that there was no penalty attached to those midwives who, in defiance of Clause 2, should attend abnormal cases of labour, give medical certificates, or certificates of death or still-birth, and that they were of opinion that it did not therefore provide adequate means for promptly checking a licensed midwife who did any of these things. On Clause 8 which constitutes every County Council or Council of a County Borough the local supervising authority over midwives within its area, the Association represented that as the Bill stands, the local supervising authority would have no power to suspend a midwife charged with malpractice, negligence, or misconduct, other than conduct tending to spread infection, but would have to report the case to the Central Midwives' Board. This Board would sit, presumably in London, probably not oftener than at most twice a year, and would not have power to take evidence on oath, or to enforce the attendance of witnesses. If it found the charge proved, the only penalty it could inflict would be the removal of the name of the midwife from the roll. The Association was of opinion that a much simple and more efficient mode of administration would be to provide, under Clause 2, for the infliction on summary conviction of a fine not exceeding five pounds.

On Clause 3 which provides that the certificates issued by the Royal College of Physicians of Ireland, or the Obstetrical Society of London, should enable a woman to be registered

under the Act, the Association pointed out that the Irish College had ceased to give such certificates, and that the Obstetrical Society is not a statutory body, but a private society which is not recognised by the medical profession as having any authority to grant such certificates. They, therefore, desired that the words recognising these certificates should be left out, and words inserted requiring evidence of good character as well as competence.

On Clause 4 the Association represented that the habits and circumstances of the population, and the customs and conditions of practice, vary in different districts, and the Association was of opinion that the Central Midwives' Board should be made as representative of the different parts of the country as was possible in the case of so small a body. The provision made in the Bill would probably result in the appointment of practitioners resident in London. The Association thought it would be better if it were arranged that the members of the Central Midwives' Board should be appointed by the Medical Council as follows:—One practising in the London and South-Eastern Registration Divisions, one practising in the South-Western, West-Midland, or Welsh Registration Divisions, one practising in the Eastern, North-Midland, or South-Midland Registration Divisions, and one practising in the Yorkshire or Northern Registration Divisions, as from time to time defined by the Registrar-General.

With reference to the duties of the Midwives' Board, the Association represented that the rules made by the Board should distinctly set out that any omission to summon medical aid in case of abnormal labour, or of disease or danger to the mother or child, should be misconduct on the part of the midwife.

With reference to the local supervision of midwives, provided for by clauses 8 and 9, the Association represented that in order to make such supervision effective, the members of any Committee appointed for the purpose by the local authorities, should be registered medical practitioners.

As to the definition of midwife, the British Medical Association took the strongest exception to the definition of midwife now contained in the Bill, and recommended that the definition should

be :—" The term midwife means a woman who for gain undertakes to attend women during labour and the lying-in period." The Association also recommended the insertion of clauses in the Bill to provide against the employment of uncertified substitutes by midwives, and also to direct that lying-in houses or premises, where pregnant or lying-in women are received, should be periodically inspected by the County Council or other local authority, its first proposal, that such inspection should be by the Central Midwives' Board, having been regarded as likely to prove expensive and inconvenient.

MEDICAL LEGISLATION IN JERSEY.

The text of a law on the practice of medicine and surgery, passed by the States of Jersey on February 22nd, 1900, was before the Medical Council at its May sitting, having been transmitted by the Privy Council with a request for the observations of the General Medical Council.

Visitors to this beautiful island may remember that it has its own Parliament or States, who make its laws, assisted and guided, but not controlled by our Colonial Secretary. The most important feature of this new Medical Law is the explicit prohibition of unqualified practice, and the establishment of substantial penalties for the infringement of this provision. In this, as in all recent enactments in British Colonies, and as is the case also with the laws in force in most, if not in all, foreign countries, the sensible course has been adopted of dealing with the act of practising, and the United Kingdom stands almost alone in resting content with a futile law which deals with the assumption of title, with the shadow instead of with the substance !

RECIPROCITY OF PRACTICE WITH FOREIGN COUNTRIES.

The question of Reciprocity of Practice with Italy came before the Medical Council during its last Session. It is provided by Clause 17 of the Medical Act of 1886, that her Majesty may, from time to time, by Order in Council, declare that the part of that Act referring to the registration of foreign medical practitioners by the Medical Council, shall be deemed, on and after a day to be named in such Order, to apply to any British posses-

sion or foreign country, which, in the opinion of Her Majesty, affords to the registered medical practitioners of the United Kingdom, such privileges of practising in the said British possession or foreign country as to Her Majesty may seem just; and the subject was brought before the Council by a letter from the Lord President of the Privy Council informing them that Her Majesty's Government would, at the proper time, recommend Her Majesty to make an Order in Council applying that portion of the Medical Act to Italy. The Lord President at the same time enclosed a copy of despatch from Her Majesty's Ambassador at Rome, pointing out that it was the opinion of the English doctors practising there, that the privileges accorded to them in Italy were just and reasonable, and such as would, in their opinion, justify the application to Italy of the above section of the Medical Act, so soon as they were confirmed to them by the Italian law then under consideration on the basis of reciprocity, and they, therefore, asked that immediate action should be taken in the matter as soon as the Italian measure had become law.

It was objected in the Medical Council that the possible consequences of this one-sided reciprocity, which proposed to admit Italian practitioners here to the full privileges of registered medical men, while the Italian law only proposed to give English practitioners in Italy the right to practice among foreigners, might be that a flood of foreign practitioners would come, over whom the Medical Council would have little or no control. Italy, it was said, was a poor country, whereas England was rich, and as soon as Italians knew that they could come here and have full privilege of practice in this country, a large influx might be expected.

This was to be done in the interest of some 35 or 40 English practitioners in Italy, and it was hard to see why they should run the risk of injuring the general profession throughout Great Britain in order to protect these gentlemen who might easily get out of their difficulty if they chose, because it was understood that in Italy it was quite easy for a man who was fully qualified in England to obtain a qualification to practice medicine.

It was determined in the end to represent to the Privy

Council that the application of Part II. of the Medical Act of 1886 to Italy at present would not provide the basis of equal reciprocity of practice between the United Kingdom and Italy as suggested in the Despatch of Her Majesty's Ambassador at Rome, and also to urge Her Majesty's Government to use its influence with the Italian Government in promoting legislation on this subject, so as to secure for British practitioners full privileges of practice in Italy, such as would be conceded by the law of this country to Italian practitioners.

THE CERTIFICATION OF DEATHS.

This is a subject of a good deal more importance to the profession in England and Scotland than it is in Ireland, and it is one with reference to which the Medical Council last year resolved to seek an interview with the President of the Local Government Board, but as great bodies move slowly, nothing further has been heard of any such interview having taken place. It is now about seven years since a Select Committee of the House of Commons took a large amount of evidence on the subject, and came to the conclusion that vastly more deaths occur annually from foul play and criminal neglect than the law recognises, that the existing procedure plays into the hands of the criminal classes, and that in order to remedy this state of things a modification of the Continental system of *médecins vérificateurs* should be adopted here for cases in which a medical certificate of death is not forthcoming. Even among the class of certified deaths the Committee found that there were many cases where unqualified assistants had attended, and their qualified employers who had never seen the cases, certified: other cases in which the certifying doctor had not seen the patient for weeks or months prior to death, and who only knew from hearsay of death having taken place: and others again in which the true cause of death was suppressed in deference to the feelings of survivors. Cases were mentioned, too, accidentally brought to light, of deaths registered with a view to fraud on insurance companies, of persons afterwards discovered in some cases to be still alive: deaths had also been registered under circumstances suggestive of fraud, regarding which it was not known whether

the subjects had or had not died, and coffins buried alleged to contain corpses, the deaths of which had not been registered, and concerning which all that was known was, that no such persons as those alleged to have been buried had died at the address given to the burial authorities. In Scotland, where the deaths of illegitimate children are recorded separately from those born in wedlock, it was found that 27·5 per cent. of the illegitimates died under one year of age, as against 13·7 per cent. of the legitimates: and that of the deaths of illegitimate children under one year, 21·6 per cent. were uncertified, as against 10·6 per cent. of legitimate children of the same age. The Committee found that the proportions of uncertified to total deaths were in England and Wales 2·7 per cent.; in Ireland, 6·7 per cent.; and in Scotland, 5·8 per cent. In many districts, however, they found the proportion to be far above the general average. North Wales, for example, showing 8·5 per cent., and Inverness-shire 42 per cent. of the total deaths. The Committee draw attention to the fact that in England many of the registrars are not fit to decide whether a case should be referred to the coroner or not, as they often do not understand the medical terms used. They add that it might have been anticipated that in Ireland where the office of registrar is held by medical men, the causes of death would be more correctly certified than in other parts of the United Kingdom, and that Dr. Grimshaw's evidence quite bears out this anticipation.

The Committee recommended that in order to remedy the evils of the present system, a medical man should be appointed in each district to investigate all deaths not medically certified, as is done at present in Edinburgh, and that a fee of half-a-crown should be paid either by the State or by local authorities for each certificate of death. These recommendations would doubtless have been carried out long ago but for the expense, as it was found it would cost from £60,000 to £70,000 a year, and the decision of the Treasury seems to have been that the game was not worth the candle.

CORONERS' COURTS.

Closely connected with the subject of death certification is that of Coroners' Courts, on which the Select Committee of the

House of Commons also reported. In England, ever since Shakespeare's time,* "Crown's quest law" has been a standing joke, and it shows how little ridicule tends to kill in this country, or even to reform old standing abuses, when we find that coroners nowadays are as little compelled to conduct their inquiries in a systematic legal manner as they were in "the spacious times of great Elizabeth." There are positively no regulations in force, the Committee state in their report on the authority of the Coroner for Central Middlesex, under which the coroner exercises his functions. He is expected to use his own discretion as to the steps necessary to elucidate any case which may come into his hands. He may either hold an inquest in practically every case, as in East London the coroner does in 99·9 per cent., or in a much fewer number, as in South London, where the proportion does not exceed 76·0 per cent. He can make a farce of the whole proceeding by not calling medical evidence as to the cause of death, and he can accept the most absurd verdicts from an ignorant jury, such as "Died from stone in the kidney, which stone he swallowed when in a state of drunkenness," or "Child three months old, found dead, but no evidence whether born alive."

How much more for the public advantage would it be that each uncertified death should be carefully investigated by the police surgeon of the district or some other specially appointed medical man, who should have authority to make a *post-mortem* if necessary, and then give a certificate, without the formality of a coroner's inquest. In this way three-fourths of the useless inquests at present held could be done without, and the saving in expense, each inquest costing on an average from £2 to £3, would provide sufficient funds to pay the medical certifier. This system has now for some years been carried out in Edinburgh and Glasgow, where they have no coroners, and it needs but a short Act of Parliament to authorize its adoption in London and all the principal cities of England and Ireland. But while the other recommendations of the Select Committee are disregarded for fear of the expense which would necessarily be incurred in carrying them out, it is vain to hope that any new payments to

* See *Hamlet*, Act V.

members of the medical profession will be sanctioned by those in power.

MEDICAL WITNESSES' FEES.

A matter of considerable interest to a large number of practitioners in England which the British Medical Association has done its best to get rectified, though hitherto without success, is that of the remuneration paid to medical witnesses who are summoned to give evidence at sessions and assize courts, often miles away from their practices, are kept waiting in the assize town it may be for a week at a time, during which they must either employ a *locum tenens* or let their practices be neglected, and in the end are paid at the rate of a guinea a day. It is admitted by the Home Office, which is the authority on such matters, that this payment is altogether inadequate to remunerate medical witnesses for their loss in time and money caused by their attendance at court; but it is said in defence of the Office that the scale upon which doctors are paid is the same as that on which other professional witnesses are paid, that the scale goes as far back as 1858, and that though it is admitted to be unjust, successive Home Secretaries have been afraid of burning their fingers by touching it. The curious part of the matter is that neither in Ireland nor Scotland is such an injustice done. —In Ireland the instructions given by the Attorney-General to the Crown-Solicitors are that when a medical witness is summoned to attend at sessions in the town in which he resides, the usual fee of one guinea is to be paid. If he be detained in court more than three hours an additional fee of one guinea is to be paid. When summoned to attend from any other town, two guineas a day, with travelling and hotel expenses, are allowed. In Scotland also a medical witness summoned from a distant place gets two guineas a day, with one day's allowance added on for travelling. English practitioners will, no doubt, continue to complain until they are put on a par in this matter with their Irish and Scotch brethren.

DENTISTS.

The Dental branch of the profession has of late years increased in importance, and there are many of its members

who are entitled to be registered on the Medical Register and are so registered, as well as being on the Dental Register. Mr. Tomes, one of their number, has also been appointed a member of the Medical Council as a Crown nominee, and last year there were several cases brought before the Penal Cases Committee of Dentists, charged with employing unqualified or unregistered assistants, but in consideration of these being some of the first cases that had come before the Committee, and in view of the statement that the practice was very general, these cases were gently dealt with, and let off with a caution. It is highly creditable to the whole body of dentists that so few complaints are heard, either in the Medical Profession or among the public generally, of the way in which they, as a rule, conduct their practices.

II.

THE STATE OF THE HOSPITALS AND SCHOOLS OF MEDICINE, SURGERY, AND PHARMACY.

This subject is so vast that one can hardly do more, in the space at our disposal, than glance at the hospitals and schools in the three capital cities, London, Dublin and Edinburgh, and we may sub-divide it for convenience sake into the following aspects of the subject:—

A.—Voluntary hospitals as curative establishments.

B.—Voluntary Hospitals for the teaching of students.

C.—Rate-supported hospitals for treatment of the sick, and their capabilities for teaching purposes.

D.—Schools of medicine, surgery, and midwifery, and also tropical medicine.

E.—Schools of pharmacy, Pharmaceutical Society, etc.

A.—If we consider the London hospitals merely as curative establishments for the treatment of disease, an enumeration of their numbers, and of the vast crowds of patients yearly treated at them as in-patients and out-patients, is well calculated to astonish, if not to render incredulous, as to the correctness of the figures, those who have not previously paid special attention to the subject. For some years the *Lancet* has published an annual statement showing the hospitals, general and special, which receive grants from the Hospital Sunday Fund, with the

number of in-patients at each, and the numbers of visits of out-patients to them, also similar details of the London dispensaries. From this it appears that there are 26 general hospitals and 58 special hospitals receiving grants, 40 cottage hospitals and convalescent homes, and 55 dispensaries, provident or otherwise. At these various establishments for the treatment of disease 103,000 in-patients were treated in a single year, and the enormous number of 4,700,000 (four million seven hundred thousand), visits of out-patients are recorded. Over three million four hundred thousand of these attendances were at the general and special hospitals, and nearly one million three hundred thousand at the dispensaries, cottage hospitals and Convalescent homes. If we divide the number of attendances by three we shall probably arrive at an approximately correct estimate of the actual number of patients, as distinct from attendances, which would give the still amazing total of over one million and a-half of persons seeking treatment of some sort at London hospitals and dispensaries. Even this number, however large as it seems, does not give anything like a complete total since two of the large endowed hospitals, St. Bartholomew's and St. Thomas's, treating between them 180,000 cases yearly, are not included, and there are besides, various smaller institutions, which, for one reason or another, are not included in the Hospital Sunday grants. As to the in-patients at hospitals, we are told how many died, how many recovered, how many were sent to convalescent homes, and how many remained under treatment ; but as to the million and a half of out-patients, no such statistics are possible. They were seen perhaps once, twice, thrice, some of them perhaps more frequently, but no record is left of the result, and no official connected with the hospitals can say whether they were any the better of the millions of pints of physic which they carried away with them from the hospital dispensary. Needless to say, however, that this "doctor's stuff," as the patients call it, costs the hospitals and dispensaries a very considerable sum of money, and as the majority of London hospitals and dispensaries are carried on under a perpetual pecuniary stress, the regular income of very few of them being at all equal to the expenditure, and the disproportion in some of the largest and best known being notable, regular, and increasing,

the entire work of administration, as well as of healing and ministering to the sick, is greatly hindered by the dragging strain of poverty. Not only is the anxiety of the lay managers enormously aggravated by the constant shadow of impending bankruptcy, but the efforts of the medical officers are seriously hampered by it. A few years ago when a surgeon to one of the famous London hospitals wished to introduce the antiseptic system of treating wounds into his wards, he was told by the hospital committee that he would have to pay for the expensive dressings out of his own pocket. Needless to say, the antiseptic appliances were, for the time, not applied in that hospital. The stress of poverty also leads the managers to indulge in what sometimes prove to be expensive experiments, which occasionally lead to still greater depletions of the exchequer. Dramatic entertainments are got up, which do not always prove a success. Bazaars, dinners, and other well known means of inducing people to part with their money, have become so numerous, and are so often got up for questionable institutions, that it requires quite a special skill in their promoters, or the presence of royal or other influential patrons, to ensure success. It must not be supposed, however, that no efforts have been made by the public generally, to lessen the burden of those who are carrying on the great work of the London hospitals under such difficulties. The Hospital Sunday Fund has for nearly thirty years been rendering help by its collections made in nearly all places of worship on Hospital Sunday. Commencing in 1873 with a sum of £27,000, it has of late years been able to distribute about £40,000 a year, or perhaps a little more, to those institutions which seemed to its Distribution Committee at once the most worthy of it and the most needing help, but with the constantly-increasing expenses of hospitals, this, as well as the Hospital Saturday Fund, has done little really to relieve their necessities.

In 1890 the House of Lords appointed a Special Committee to investigate the whole subject of hospital accommodation in the metropolis, and that Committee, after deliberation which extended over two years, during which it had before it many highly skilled witnesses, both of those belonging to our profession, and others familiar with the whole subject of hospital

finance, produced a Report making certain recommendations. Although going over a great deal of ground, and dealing with a variety of topics, the main object of this Report appeared to be to prove how much the work of hospitals would be advanced by an improved organization which, instead of leaving them to struggle for funds as individual entities, should knit them all into one co-operative whole. To this end it was recommended that a Central Hospital Board should be formed, and should be empowered to receive and publish hospital accounts, to advise upon new schemes, and to act generally as the authorised representatives of the public in the way of observing, and criticising where necessary, hospital management and work. This proposal, though made on such high authority with an evident desire to help the hospitals out of their present serious difficulties, has hitherto not been carried out. It would be difficult, if not impossible, to carry it out without either the willing assent of hospital managers, or the *force majeure* of an Act of Parliament. It is confessed that the voluntary system, as at present carried out, has to some extent broken down, that many London hospitals are on the verge of bankruptcy, and that the efficiency of others is being seriously impaired by their poverty; that the demands of the sick upon hospitals have grown with the growth of the metropolitan population, while the sources of revenue especially of some of the endowed hospitals, have materially decreased. Yet the managers shrink from even such gentle control as would be exercised by a Central Hospital Board, and seem to see in it the first step to a system of State control and State aid, which they fear would be fatal to the principles of voluntary contributions and independent action to which they at present look for the support which is often at best irregular, impulsive, and local. Facts, however, are stubborn things, and it is a well-known fact that the managers of many of the most famous hospitals in London have for years been at their wit's end to know what to do for money. Within the last few years one of the most celebrated of them published an appeal for funds, stating that whereas in 1880 its net income from the hospital estates was £40,000, in 1895 its income from the same property was only £20,000, and that unless a liberal response was made to the appeal, it would become necessary to close some

additional wards. Already, it was stated there were 100 beds thoroughly equipped in other respects, which were closed and had been closed since 1880, owing to want of money to provide the necessary maintenance and nursing attendance, though every day thoroughly deserving cases, relievable by hospital treatment, had to be refused admission. As showing how much work the hospital is doing, it is stated that the number of occupied beds, in 1895, was 621; of in-patients accommodated, 6,411; of out-patients treated in 1895, 151,664; and of maternity cases attended outside the hospital, 3,363. One of the things specially noticeable in this and similar appeals is, that however many beds may be closed, no curtailment of the huge out-patient departments of this or other hospitals is ever proposed, though it is quite certain that 10,000 less out-patients every year would cause much less suffering among the poor than the closing of 100 beds, but it is one of the weak points of the voluntary system of support that hospital secretaries are obliged to show big numbers relieved, lest there should be a falling off in subscriptions and donations.

One of these days, however, it will come to be recognised that the attempt at providing some sort of medical treatment for one in every three of the inhabitants of London (one million and a-half out of four millions and a-half) is both unnecessary and absurd, a large proportion of those applying at London hospitals being perfectly well able to pay the small fees of outside practitioners.

LONDON SPECIAL HOSPITALS.

AT the special hospitals (for the Skin, Eye, Ear, Heart, &c.) there can be no doubt of the abuse which exists, these institutions being largely resorted to by a class of the community quite above the general run of those who go to general hospitals. Thirty-two of these hospitals receive payments from their patients, varying from a penny, two-pence threepence, sixpence, to a shilling each visit, to half-a-crown or five shillings, or even more, per week, for out-patients, and sums running up to two or three guineas a week for in-patients. The total sum thus received from patients in 1895 by these thirty-two hospitals amounted to £24,000, and though this large sum is earned entirely by

the work of the medical staff, yet they receive no portion of it in return, the *kudos* of being on the staff of the hospital being supposed to recompense them sufficiently. More than half these special hospitals obtain more money from their patients than they do from annual subscribers: in some cases ten times as much. At one of them the average sum received for treatment from each paying out-patient was 11s. 9d. At fifteen of these institutions it was found that there was practically no inquiry at all into the financial circumstances of those applying for relief, anybody that likes applying for receiving it as a matter of course. Where an inquiry is made it is for the most part inefficient and wrongly directed. It partakes, as a rule, of one or two characters, either (1) how much can the patient pay to the hospital? or (2) can the patient pay a specialist's fee of one or two guineas? In neither case is the patient asked if he or she could pay the fees of a general practitioner. In all cases the inquiry is of the most superficial nature, and the word of the patient is taken without any attempt to verify the statements made. At some of these places it appears to be the custom to throw on the medical staff the duty of deciding as to the eligibility of applicants—a most unfair and unadvisable thing to do, as the work is obviously outside the duties of the visiting staff, whose objection to any one individual might be regarded as saying “you can consult me at my own house by paying my fee.” Many of the cases treated at these special hospitals are of the most ordinary nature, not in the least requiring the skill of a specialist, but could be quite well treated by a general practitioner, and so little do these institutions confine themselves to the disease or speciality from which they take their name, that at the Cancer Hospital cases of abscess, syphilis, and piles are treated; at the Chest Hospital cases of anæmia and dyspepsia, and at Women's hospitals the cases are by no means all those peculiar to women.

That a serious injury is being done by these special hospitals to practitioners in their neighbourhoods is quite certain, the £24,000 paid by their patients for medical treatment by persons not paupers, representing at least double the amount which is diverted from the pockets of private practitioners, but the difficulties in the way of remedying this abuse are immense, as many of the so-called hospitals would cease to exist if it were

not for the payments received from patients, while the medical staff find that connexion with a special hospital gives them a standing as specialists on that particular subject with the public, which may ultimately lead to their private consulting-rooms being thronged with patients. The profession, however, has a right to demand that in all hospitals claiming to be public institutions, and especially in all receiving grants from the Hospital Sunday and Hospital Saturday Funds, proper enquiries should be made by a competent officer, and a wage limit fixed, say of 30s. for a single person, and 50s. for married people, beyond which no one, apart from exceptional cases, should be allowed to claim treatment even by paying.

As to the less reputable special hospitals, which are often established by two or three private practitioners for their own special benefit, it seems sufficient to say that no medical man who has any proper regard for his own professional reputation, or for the opinion of his professional brethren, ought to have anything to do with them.

B.—VOLUNTARY HOSPITALS WITH SCHOOLS FOR THE TEACHING OF STUDENTS.

There are in London twelve hospitals having medical schools attached to them, namely—St. Bartholomew's, with 744 beds; Charing Cross, with 180; St. George's, with 356; Guy's, with 695; King's College, with 221; the London, with 800; St. Mary's, with 281; Middlesex, with 320; St. Thomas's, with 572; University College, with 185; Westminster, with 215; and the Royal Free, with 170 beds. Now, it has long been the opinion of many well qualified to judge, that a dozen medical schools is too many even for such a huge metropolis as London. The late Professor Huxley thought there were not more than three teachers in London capable of teaching the subject of physiology as it should be taught, and he referred with disapproval to the system usual in the London schools, according to which one of the staff takes the chair of physiology, not because he is specially fitted for it, but simply as a stepping-stone to some other chair, such as medicine, when this becomes vacant. The matter is all the more important at the present time, because under the new scheme for the re-organisation of the London University, all

these twelve schools will, doubtless, expect to be admitted as constituent colleges of the new university, while it is very well known that the facilities for acquiring knowledge on such scientific branches as are comprised under the Preliminary Scientific examination are not to be found at all the smaller schools. Without going so far, therefore, as to say that nine of the twelve should be done away with, it may be confidently maintained that the reduction of their number to six would be advantageous to all concerned.

Times are greatly changed for the medical student since the time when, after an apprenticeship of three or five years to a country practitioner, he came up to London to "walk the hospitals" for two or three years, got a smattering of anatomy and physiology, learned his surgery pretty well, his medicine not so thoroughly, did a little dispensing with which he was probably already familiar, attended half-a-dozen cases of midwifery, and in a single examination at the College of Surgeons, passed or was "spun" in all the subjects on which it was thought necessary to examine him.

He is now expected, after passing his preliminary examination, to get some knowledge of botany, chemistry, and physics, to master the sciences of anatomy and physiology, to learn the symptoms, pathology, and treatment of about five hundred diseases included under the heading of medicine, of about as many more under surgery, to know the mechanism of normal and abnormal parturition, and the diseases incident to that state, along with the other special diseases of women; to acquire some knowledge of lunacy, diseases of the eye, ear, throat, and skin, of venereal diseases; to become acquainted with all the drugs in the *Pharmacopœia*, their composition, uses, and doses; to practise dispensing; to perform surgical and obstetric operations; to dress wounds; to learn the clinical uses of the stethoscope, ophthalmoscope, laryngoscope, and microscope; to test urine, to examine blood, to make *post-mortem* examinations; and to familiarise himself with diseases of all kinds by attendance on practice in the wards and out-patient rooms of hospitals. In addition, he must devote some attention to the principles of medical jurisprudence, the practice of antiseptic vaccination, and the subject of public health.

The means used in the medical schools for pouring all this accumulation of knowledge into their students are for the most part lectures and demonstrations. Systematic courses of lectures upon most of the subjects named are delivered in the medical schools either in the winter or summer session, while the methods of medical examination and the use of clinical instruments of research, urine testing, the dressing of wounds, putting up of fractures, the use of surgical instruments, dispensing, the performance of *post-mortems*, are, or ought to be, taught at the hospitals. Unfortunately, there is no regulated proportion between the size of a hospital and the number of students that may be taken in its medical school, so that it may happen, and, indeed, has with a celebrated London hospital, that there were almost more students than beds. As each student is compelled to serve as clinical clerk in the medical, and dresser in the surgical wards, this causes a good deal of inconvenience sometimes. The special hospitals, of which mention has already been made, are not utilized to any extent for teaching purposes.

With regard to attendance on systematic lectures, there can be little doubt that if it were not compulsory to do so in order to get "signed up," the attendance at most of them would be but scanty. Few Englishmen have the art of either composing or delivering interesting lectures on medical subjects, and the reading of a dry essay from manuscript, without art or charm of voice or manner, is better calculated to send the hearers to sleep than to impress upon their memory the leading facts of the subject under discussion. On the other hand, the practical classes, by which in recent years the teaching of the systematic lectures have been supplemented, form a most valuable feature in modern medical education. In this way are taught auscultation and percussion, the use of the laryngoscope and ophthalmoscope, minor and major surgical operations, operative midwifery, morbid anatomy, and bacteriology. The last-named is one of the most recent additions to medical study, and most of the London schools record the appointment of a bacteriologist with special laboratory accommodation.

The most important part of a student's education after all is that which fits him by work in the hospital wards for treating cases hereafter on his own responsibility, and here it is that the

system of clinical lectures, for which the Dublin School has long been famous, become so useful. Not every teacher, however, knows how to make the best use of the material at his command, and hence some of the twelve hospital schools have a much higher repute among students than others. If it were possible to have in London from three to six medical schools unconnected with any hospital, and well supplied with tutors and laboratories of all sorts, the student might then be permitted to get his clinical teaching at places where the hospital staff is known to teach, instead of having, as at present, to pay for lectures which may be good, bad, or indifferent.

The Medical Schools, however, already in existence have cost a good deal of money—one of the most recently built, the Medical School for Women in connection with the Royal Free Hospital, cost about £27,000,—and as in many cases the schools, though attached to hospitals, really belong to the lecturers, who have their vested interests to look after, it seems hardly likely that voluntary amalgamation will take place between them. Indeed, some years back an attempt was made to effect an arrangement of the kind between University College Hospital, where there was a large number of students with a small number of beds, and Middlesex, with more beds and fewer students, but the negotiations fell through, and are not now likely to be resumed. In this, as so many other cases, vested interests stand in the way of public improvements. It is obvious, of course, that in the larger hospitals with 600 or 800 beds, the students have better opportunities of seeing a variety of diseases, both medical and surgical, than in a small hospital with less than 200 beds; and hence it is to be regretted that no effort has hitherto been made to render available for the instruction of students the large amount of clinical material contained in the Metropolitan Poor Law Infirmaries established under Gathorne Hardy's Act of 1867, and this leads me to the next division—

C.—THE RATE-SUPPORTED HOSPITALS FOR TREATMENT OF THE SICK, AND THEIR CAPABILITIES FOR TEACHING PURPOSES.

There are in and near London some twenty-five Poor Law Infirmaries, containing over 12,000 beds, with reference

to the cases treated in which, it was given in evidence before the Lords' Committee on Hospitals, that there could be no doubt of their value for purposes of instruction, and the Committee, therefore, recommended that they should be thrown open to students. It appears that this was originally intended to have been done by the Act of 1867, but, for some reason or other, no clause authorising it appears in the Act as passed. The Committee, in the interests alike of the patients and of medical science, recommend that the original intention of the framers of the Act should now be carried out, adding that nothing tends more to check any tendency to dull routine, and to the habit of careless diagnosis to which men are subject who have a constant succession of similar cases to deal with, than the presence of a class of students. In addition to these Poor Law Infirmaries, there are also a number of hospitals under the Metropolitan Asylums' Board, consisting of three asylums for imbeciles, five fever hospitals, and a convalescent hospital for fever cases, three smallpox ships in the Thames, at Long Reach, and the Gore Farm Hospital for Smallpox at Darenth. For fever and diphtheria cases 2,429 beds are available, and for smallpox, 1,150, and the total number of cases of fever treated in 10 years was 38,433, and of smallpox 26,357. There is thus an immense amount of clinical material which should certainly be utilized for the purposes of clinical instruction. It may be noticed in passing that arrangements have been made by which clinical assistants can be appointed at each of the fever hospitals for periods of six months, and this looks like the beginning of a system by which ultimately all these hospitals will be available for students.

THE MEDICAL SCHOOLS IN ENGLAND

outside London, which give instruction in the full medical curriculum, are those of the Universities of Oxford, Cambridge, and Durham (University of Durham College of Medicine, Newcastle-on-Tyne); the three Colleges of the Victoria University (Owen's College, Manchester; University College, Liverpool; and the Yorkshire College, Leeds); Mason College, Birmingham (Queen's Faculty of Medicine); University College, Bristol; and University College, Sheffield. The opportunities for obtaining a good

knowledge of the preliminary sciences, and of anatomy and physiology, at the Universities of Oxford and Cambridge are unsurpassed; the staff of teachers is in each case a distinguished one, and the laboratories are most completely appointed. Instruction in clinical medicine, surgery, and midwifery is given by the University Lecturers and by the Visiting Staffs of the Radcliffe Infirmary at Oxford, and of Addenbrooke's Hospital, Cambridge; but these hospitals being small, and containing only 145 and 153 beds, respectively, it is the rule for Oxford and Cambridge men, after spending three years at the University, to proceed for the remaining two years to London or some other large town where the opportunities of gaining clinical experience are greater. At many of the London schools special arrangements are made to meet the case of students from the Universities joining under these circumstances, and at some hospitals they are placed on the same footing in regard to obtaining the coveted positions of House-Physician and House-Surgeon as those who have taken their whole course at the hospital. The arrangement and appliances for laboratory and other practical instruction at Owen's College, Manchester; at University College, Liverpool; at the Yorkshire College, Leeds; and at University College, Bristol, are most complete, having in each case been recently enlarged and improved. At Birmingham, where a Midland University is shortly to be established, the Medical School is now a Faculty of Mason College, and it is provided with all the most modern facilities for instruction in science, while the great hospitals afford equally excellent opportunities for clinical work.

The Medical School of the University College of South Wales and Monmouthshire at Cardiff, gives instruction in all the subjects belonging to the first three years of the medical curriculum.

IRISH MEDICAL SCHOOLS AND HOSPITALS.

The principal Dublin schools are the School of Physic, formed by the amalgamation of the Medical School of Trinity College and of the Royal College of Physicians, the School of Surgery of the Royal College of Surgeons, and the Catholic University Medical School. The School of Surgery attached by

Charter to the Royal College of Surgeons, has been in existence for over a century. It is carried on within the College buildings, and is specially subject to the supervision and control of the Council of the College. The buildings have been re-constructed, the capacity of the Dissecting-room nearly trebled, and special Chemical, Pathological, Bacteriological, Public Health, and Pharmaceutical Laboratories, fitted with the most approved appliances in order that students may have the advantage of the most modern methods of instruction. There are special rooms set apart for lady students. The entire building is heated throughout by hot-water pipes, and lighted by electricity. It should be noted that this school now includes the Carmichael College and Ledwich School.

Clinical instruction is given in Dublin by the staffs of Sir Patrick Dun's Hospital, the Adelaide Hospitals, City of Dublin Hospitals, Dr. Steeven's Hospital, House of Industry Hospitals, Jervis Street Infirmary, Mater Misericordiæ Hospital, Mercer's Hospital, Meath Hospital, National Eye and Ear Infirmary, St. Mark's and St. Vincent's Hospitals, Richmond Hospital, St. Patrick's Hospital. Outside Dublin, the medical student can obtain his instruction in the Queen's Colleges of Belfast, Cork, or Galway, which unitedly form the Royal University of Ireland (formerly Queen's University) from which he can obtain the degrees of M.D., M.Ch., etc. As these Colleges are open, as also, of course, are the Dublin Medical Schools, to those of all religious opinions, it is not easy to see what advantage can be gained to the cause of medical education in Ireland by the proposed establishment of a Roman Catholic University there.

SCOTCH HOSPITALS AND MEDICAL SCHOOLS.

In Edinburgh the principal medical school is, of course, that connected with the famous University; but there is also the school of medicine of the Royal Colleges, and a medical college for women. At the University School the following means are provided for practical instruction:—the Royal Botanic Garden, Herbarium, and Museum; the Zoological Laboratory and Museum of Science and Art; a Physical Laboratory; Chemical Laboratories; Dissecting Rooms, Bone Room, and Anatomical Museum; Physiological Laboratory; Medical Jurisprudence and

Public Health Laboratories; Materia Medica Museum and Laboratory; *Post-mortem* Department of Royal Infirmary and Bacteriological Laboratory. Clinical instruction is given at the Royal Infirmary, of nearly 800 beds; at the Royal Hospital for sick children, the Maternity Hospital, the City Fever Hospital (about 400 beds), while mental diseases are studied at the Royal Morningside Asylum.

Outside Edinburgh facilities for medical study in Scotland are found at the Universities of Aberdeen and Glasgow, at St. Mungo's College, Glasgow, at Anderson's College Medical School, Glasgow, and at University College, Dundee.

SCHOOLS FOR THE STUDY OF TROPICAL MEDICINE.

Tropical diseases form such a large part of the diseases which English practitioners who go abroad, either in the army or navy, or for private practice, have to treat, that it is not astonishing that two schools for their special study have been established, one in London and one in Liverpool, in both which places numerous cases are found of sailors and others suffering from these diseases. The London School is connected with the Seamen's Hospital Society, which has two hospitals, one at Greenwich, containing 225 beds, and a branch hospital at the Royal Victoria and Albert Docks, which is being enlarged to 50 beds. It has also two dispensaries, one in the East India Dock Road, and the other at Gravesend, from which patients are admitted to the hospitals. School buildings, laboratories, museum, library, etc., have been built, and every facility is given for studying diseases incidental to tropical climates, Dr. Patrick Manson being among the lecturers. The Liverpool School is established in connection with University College, Liverpool, and the Royal Southern Hospital, Liverpool, a special ward at the hospital being set apart for the reception and treatment of tropical diseases, and all necessary facilities for investigation and study being given in the Pathological department of University College. Major Ronald Ross, I.M.S., is the lecturer on tropical diseases.

SCHOOLS OF DENTAL SURGERY.

Students in Dental Surgery can obtain the necessary instruc-

tion in special dental subjects, the general subjects being attended at some medical school, at the Dental Hospital of London; the National Dental Hospital and College, London; the Dental School of Guy's Hospital, London; at the Birmingham Dental School in connection with Mason's College, Birmingham; at Owen's College, Manchester; at the Liverpool Dental Hospital and School of Dental Surgery; and at the Devon and Exeter Dental Hospital.

The Scottish Schools of Dentistry are the Incorporated Edinburgh Dental Hospital and School; the Glasgow Royal Infirmary, Dental Department, and Anderson's College Medical School, Glasgow.

In Dublin the Incorporated Dental Hospital of Ireland supplies the lectures and dental hospital practice which are accepted by the licensing bodies from candidates for the L.D.S.

POST-GRADUATE COURSES OF STUDY.

This is a new development of medical study which was not thought of in Mr. Carmichael's time, and has, indeed, like the necessity for it, only arisen in quite recent years. As a result of the enormous growth of medical and surgical science and art, practitioners who found themselves unable to keep themselves acquainted with the details of that advance, found themselves after a while quite "behind the times." The mere failure to advance placed them at a distinct disadvantage in their daily warfare with death and disease. Even the best student in the schools, too, can hardly find time to master all branches of medical and surgical treatment, nor can he often tell, while still *in statu pupillari*, which is the particular branch, a thorough proficiency in which will be of most service to him hereafter. Hence arose, at first on the Continent and in the United States, a series of post-graduate classes, designed to keep qualified men abreast of the scientific advances of their profession, and in London, after a few years' trial of holding such classes at different hospitals, the movement obtained "a local habitation and a name," by the acquirement of a building in Chenies Street, W.C., and the organization there of the London Medical Graduates' College and Polyclinic, which has already attracted to itself large classes of practitioners, for whose benefit consultations are held

on difficult cases every afternoon during the greater part of the year, clinical demonstrations are given on selected cases each week, and clinical lectures, by well-known authorities, from time to time. There are also special rooms provided for the use of the ophthalmoscope, the laryngoscope, and other instruments of precision, and one which has been fitted up with the Röntgen Ray apparatus. There is a museum containing many interesting illustrations of disease, and a library, to which Mr. Jonathan Hutchinson, who has from the first taken the warmest personal interest in the college, and to whom, indeed, its existence is largely due, has contributed a quite invaluable collection of extracts and memoranda collected by him during his long professional life, which fill many volumes.

The practical classes already carried on at the Polyclinic include:—Medical and Surgical Anatomy, and Physical Diagnosis; Methods of investigating cases of Disease of the Nervous System; the use of the Röntgen Rays in Medicine and Surgery; Practical Ophthalmology, the use of the Ophthalmoscope, and Refraction; Practical Laryngology and Rhinology; Practical Otology; Clinical Microscopy; Morbid conditions of the Urine, and their Clinical significance; and the courses of lectures are on General Ophthalmology, Diseases of Children, Diseases of the Skin, Comparative Pathology, and the Administration of Anæsthetics.

There are also classes in association with the College held on Practical Bacteriology at the King's College Bacteriological Laboratories; on Mental Diseases, held at Bethlem Hospital; and on Hygiene and Public Health, held at the Parkes' Museum, Margaret Street, W.

SCHOOLS OF PHARMACY.

The principal School of Pharmacy in the United Kingdom is that established by the Pharmaceutical Society in Bloomsbury Square, London. The Pharmaceutical Society of Great Britain was founded in 1841, incorporated by Royal Charter in 1843; enlarged by Acts of Parliament in 1852, 1868, 1869, and 1898. It has at its school Professors of Chemistry, Botany, Materia Medica, and Pharmacy. Students, who must have passed a preliminary examination in English Grammar and Composition,

Latin, a Modern Foreign Language, Arithmetic, Algebra, and Euclid, at one of the Universities or legally constituted examining bodies, here receive a systematic course of instruction during a period of not less than six months, during which they attend at least sixty lectures on Chemistry, do eighteen hours' work in each week of Practical Chemistry, have forty-five lectures and demonstrations in Botany, and twenty-five lectures and demonstrations in Materia Medica. In Botany they are instructed in the main divisions of the vegetable kingdom and their most important characteristics, are taught to recognise the more important plants used in medicine, and learn the morphology of plants, including their anatomy, and the elementary facts of their physiology. In Chemistry they acquire an elementary knowledge of such subjects as the law of gravitation, specific gravity, atmospheric pressure, the balance, the barometer, air-pump, and syphon; the law of Boyle, temperature, thermometers, the law of gaseous diffusion, and the methods of determining vapour densities. The chief characteristics of chemical action, the laws of chemical combination by weight and volume, atomic weight and molecular weight, chemical formulæ and nomenclature, are also taught them. The general characters of metals and non-metals, and the general methods of forming oxides and salts, and the usual impurities in such of the non-metals and their compounds as are included in the *British Pharmacopæia*, are also included in the course. The student is also taught how to solve simple problems relating to the weight and volume, under different conditions of temperature and pressure, of elements and compounds concerned in chemical reactions. In practical chemistry the student learns how to determine the specific gravity of liquids and solids, to recognise by chemical tests the more important non-metallic elements and compounds, as well as the metals and their salts; to detect the chief impurities, and to recognise by their physical characteristics those which possess well-defined characteristics; also to perform those volumetric determinations which are described in the *British Pharmacopæia*. In Materia Medica the student is taught to recognise specimens of any crude drugs mentioned in the *British Pharmacopæia*, or which may be in common use, as well as their principal adulterations; is made acquainted

with their principal adulterations; with their botanical or zoological, geographical, and commercial sources, the natural orders to which they belong, as well as the modes of collection and preparation for the market; is taught to indicate the morphological nature of such as are organized, and the mode of formation of such as are inorganized; to correctly describe them, and to point out diagnostic characters, either chemical or physical, the latter, as far as they can be ascertained, by the use of a lens. He is also instructed how to name the chief active constituents of official drugs, to know the proportion present in good samples of the more important of them, and to attain a practical knowledge of any pharmacopœial tests or processes of assay applied to crude drugs or their official products.

In Pharmacy the student is given instruction in the following branches:—Operations requiring the use of heat, as evaporation, water, steam, and sand baths, distillation, sublimation, desiccation, etc.; disintegration of solid substances, as cutting, bruising and pulverization; solution, its nature, solvent power of various menstrua, etc., infusion and decoction, maceration, percolation, and displacement. The student is further instructed in regard to the poisons in Schedule A of the Pharmacy Act, 1868, and in the conditions imposed on the sale of scheduled poison by wholesale or retail, and also when forming an ingredient in a medicine dispensed. In Practical Pharmacy the student is taught to conduct such operations of the *British Pharmacopœia*, or such parts of them as are practicable, involved in the processes for preparing collodions, confections, decoctions, dilute acids, extracts, solid and liquid, glycerines, infusions, juices, liniments, lotions, nixtures, ointments, pill masses, plasters, powders, solutions, spirits, suppositories, syrups, tinctures, vinegars, waters, and wines. Students intending to go in for the major examination of the Society, so as to be able to register as Pharmaceutical Chemists, and not merely as Chemists and Druggists, receive further instruction in all subjects—Botany, Chemistry, Physics, and Materia Medica—the Professors in these subjects being so well qualified to teach them that they are to be recognised as such by the new London University.

It will readily be understood how important it is both to the Medical Profession and to the public to have a body of well-

taught and well-qualified pharmacists to dispense and retail medicines. It not only tends to prevent serious mistakes being made through ignorance, but the better educated the pharmacist is in his own department, the less likely is he to desire to undertake duties for which he knows himself to be unprepared, such as counter-prescribing, and even visiting the sick, which in some poor neighbourhoods is largely done by a low class of chemists. The Medical Profession is, therefore, doubly interested in the good work done by the Pharmaceutical Society of Great Britain.

THE SOUTH LONDON SCHOOL OF PHARMACY,

originally started by Dr. Muter as a proprietary school, but now carried on by a limited company, provides courses of lectures and laboratory work for students working both for the major and minor examinations of the Pharmaceutical Society. It has a chemical laboratory fully fitted for both quantitative and qualitative analysis; a museum of drugs, chemicals and plants collected during a series of years; a laboratory for the manufacture of pharmaceutical preparations, fully fitted with stills, steam-pipes, etc., and a fully furnished dispensary, where students can obtain thorough practice in the art of dispensing in all its branches. There are also subsidiary laboratories, specially furnished with microscopes and all appliances for practical biology, and also for electrical, optical, and thermal work. The school year lasts from the beginning of September in each year to the middle of the following July.

SCHOOLS OF MIDWIFERY.

The Rotunda Hospital, Dublin, is known all over the world as one of the most important Midwifery Schools in the Three Kingdoms. There are upwards of 3,750 cases of labour attended during the year, and exceptional opportunities of studying gynæcology. Female pupils are trained as midwives and nurse-tenders. The medical staff attached to the hospital seem to have taken alarm at the exclusion of Ireland from the scope of the Midwives' Bill now before Parliament, fearing that if those midwives whom they had trained and certified in Dublin were

compelled to pass a fresh examination before the Midwives' Board in England previous to being enrolled and certified for practice in England, injury would accrue to the Dublin lying-in hospitals as centres for the education and training of midwives, and they have, therefore, in conjunction with the Irish College of Physicians and the Dublin Branch of the British Medical Association, sought to get a clause introduced into the Bill, securing the recognition of the examinations and certificates of the Rotunda and Coombe Hospitals as equivalent to the proposed examination to be conducted by the Central Midwives' Board. This course appears to be much preferable to the proposal to extend the Bill to Ireland, and it is stated that the Member of Parliament in charge of the Bill has expressed his willingness to accept such an amendment. There is also in Dublin the Coombe Lying-in Hospital, mentioned above, which has sixty-five beds.

In London the principal midwifery training school is that connected with Queen Charlotte's Lying-in Hospital, at which over 2,200 patients are delivered annually. There is also the Royal Maternity Charity for delivering married women at their own homes, which employs forty district surgeons and forty midwives, and has about 4,000 deliveries annually. There are also several smaller maternity charities, and each of the hospitals with medical schools has its own extern maternity department, from which patients are attended at their own homes, principally by the students of the hospital, under more or less efficient supervision by the obstetrical staff of the hospital and their qualified assistants. The fact that there is no midwifery school in London which can at all compare with that of the Rotunda Hospital speaks volumes as to the need for more complete organization.

INTRODUCTORY LECTURES.

Before passing from the subject of medical schools, a word may be said as to the introductory lectures, which were formerly delivered at nearly every medical school at the commencement of the winter session, but have recently been dropped at many London schools. This is not surprising when one remembers that the custom had grown up of entrusting the delivery of these

semi-public addresses to a member of the junior staff of the hospital or school, who was expected to deliver himself of a certain number of platitudes on medical study, joined with a glowing eulogium on the merits of the particular school addressed. The thing had become wearisome to all concerned, and so the custom became more honoured in the breach than the observance. But it seems evident that, rightly used, the introductory lectures might even now be made the vehicles of conveying ethical instruction to students which would leave a tendency to promote that moral education which Mr. Carmichael asks the writers of these essays to consider. The golden rule of doing to others as we would that they should do to us, lies at the root of all medical etiquette worthy of the name. If it were more fully and more conscientiously observed, we should have fewer complaints appearing in the medical journals of medical men underbidding one another for patients or appointments; fewer instances of hospital abuse and of unworthy competition for club or contract practice. Now that the system of apprenticeship has become obsolete, the student has little opportunity at school or hospital of learning the various modes in which this golden rule should be applied in private practice, and it would be a task well worthy one of the most experienced members of the staff, or even of one of the most distinguished of its alumni, who need not necessarily be on the staff, to discuss *pro bono publico* the various occasions during his practice of twenty or thirty years, when the application of ethical principles led him to adopt a certain course which the mere *sacra fames auri* would never have suggested. At the most impressionable period of their lives the assembled students would thus have placed before them a standard of duty and honourable conduct, which might save some of them in after life from having an unpleasant interview with the General Medical Council.

NUMERICAL SUMMARY OF MEMBERS OF THE PROFESSION.

The summary given in *Churchill's Directory* shows that there were at the beginning of 1900 some 35,600 members of the profession on the Medical Register practising in England, Ireland, Scotland, or abroad. Of this total, 6,102 appear in the London list, 15,794 in the provincial list, England; 1,127 in the Wales

list, 2,559 in the list for Ireland, 3,462 in that for Scotland, 3,875 practising abroad, and 2,705 in the Naval, Military, and Indian Medical Services.

It further appears that there has been a total increase since 1891 of 6,127 names, the most marked increase having taken place in those practising in England and Wales, who, in 1894, numbered 14,897, and in 1900 amounted to 16,921. The practitioners in the London list, which includes, of course, the suburban districts, were in 1894 5,590, and in 1900 they were 6,102. The list for Ireland has increased but slightly, from 2,485 in 1894 to 2,559 in 1900. In Scotland practitioners have increased from 3,107 in 1894 to 3,462 in 1900. The registered practitioners resident abroad have increased from 3,209 to 3,875, and those in the Army, Navy, and Indian Medical Services, from 2,426 to 2,705. For the ten years ending in 1900 there has been numerical increase at the average rate for the ten years of about 600 per year, the maximum rate of increase having occurred in 1893-94, when the *Directory* of the latter year showed an increase of 1,013, and the minimum in 1898-99, when it was only 214. The increase from 1899 to 1900 was 513, which does not seem out of proportion to the increase of population, and the greatly increased openings in the Colonies and other countries in recent years. It is, of course, in England and Wales, including London, that the largest increase has taken place, and there also the general increase of population has been greatest, and also the capacity of the working classes to pay for their medical attendance at reasonable rates, and neither to rely upon charitable assistance nor the provision of the Poor Law for what is really one of ordinary necessities of civilised life.

CONTRACT MEDICAL PRACTICE.

It is this improved condition of the working classes which has forced into prominence in recent years the whole question of Contract Medical Practice. While the earnings of mechanics and agricultural labourers was such as not to afford a living wage, as was largely the case in the early part of the century, medical men were content to accept rates of payment which, though known to be inadequate, were often as much as could possibly be spared from too scanty wages: but with the great

improvement which has taken place in these all over England no advance whatever, but rather the reverse, has been made in the rates paid by working men's clubs for their medical attendance. While this Essay has been in preparation some circumstances which have been recorded in the Medical Journals as taking place at Wigan, show how little disposed these clubs are to pay their doctors fairly. The Wigan and District Medical Guild, it appears, has had under consideration for some time the question of attendance on juveniles and women at contract rates, and at a well-attended meeting held on May 17th, 1900, a motion was carried, after some discussion, that juveniles and women should not be attended at contract rates. The reasons advanced for this course being taken were the low rate of remuneration, the collecting of payments giving rise more or less to canvassing, the increased expenses of working practices, and the difficulty of getting good qualified assistants. The Juvenile Order of Druids, to the working of which the Medical Guild takes exception, is not, it appears, a registered society, but a commercial speculation worked by about thirty members. It has grown from small beginnings, and now employs eight or ten collectors who can make a living out of their commissions, and the medical men in Wigan and the district around receive about £500 a year from it. The rate of payment for juveniles is two shillings a head per annum, and it has lately been discovered that about seventy adults are paying at that rate as supposed juveniles. Three years ago the medical men established their medical guild, and among its first acts were to fix a minimum midwifery fee, and to refuse to attend sick and accident cases at the same rate of 2s. 6d. a-year, which, even for sickness alone, is absurdly low. The members of the guild have worked well together, and supported one another loyally, and it was thought likely that an attempt might be made by the Juvenile Order of Druids to bring in an outsider, in which case it was determined to appeal to the General Medical Council to make a pronouncement which would prevent other medical men taking work upon such terms as the Druids offer. This idea of appealing to the Medical Council has also been put forward by a correspondent of the *British Medical Journal* in a somewhat similar case occurring elsewhere, who seems to think that the Council

can declare anything to be "infamous conduct," as there seems to be such great latitude in the meaning of the term, and who goes on to suggest that the subject could be mooted at a Council Meeting, a Committee appointed who would recommend a certain fixed sum for adult members of clubs, and also for their families; that this recommendation should be adopted by the Council, and then the *fiat* goes forth, and the thing is done. But those who argue in this way have evidently not considered either the conditions under which the Council acts, or the steps which it has already taken in this matter. Some five years ago the Council had its attention directed to the medical officers of Medical Aid Associations, and a Committee of the Council, after a long investigation, found that these medical men were not acting illegally, and that the only justification the Council could have for interfering was the question whether the medical aid doctors could possibly do the laborious and almost impossible work which they undertook to do for the thousands of people belonging to these Associations; and the Committee, as Sir Samuel Wilks tells us in the *Medical Magazine* for January, 1896, saw that this principle was very far-reaching, even including, as it might be held to do, the assistant physicians and surgeons to out-patients in London hospitals, who also undertake, nominally and theoretically, to do quite impossible work. Of course, the Committee recoiled from the idea of declaring the assistant physicians and surgeons to hospitals guilty of "infamous conduct in a professional respect," and so dropped the subject, the public benefit or injury being apparently a matter with which the Committee had nothing to do. Sir Samuel Wilks doubted the desirability of the Council constituting itself a court of ethics, and laying down rules of conduct for the profession, since its opinion on such matters, he tells us, could not be enforced. But it has become quite manifest during the last five or ten years that a Court of Medical Ethics of some sort is badly needed in the profession, and if the Medical Council declines to act as such a court, it will be necessary for us to look round and see what other body can be constituted for the purpose, in such a way as to command the confidence and respect of the profession and the public. The British Medical Association has been spoken of as a suitable

body, and if other professional bodies decline to undertake the duties, it might, perhaps, in the last resort, be induced to apply to Parliament for authority to undertake them ; but, surely, the proper authorities are the Colleges of Physicians and Surgeons, who license the majority of practitioners, and who, unfortunately, after having granted them diplomas, seem to take very little interest in them or their doings, until some complaint is made to the Colleges or to the Medical Council. If the Colleges could be brought to see what an important service they might render to the profession by taking up this subject of Medical Ethics in real earnest, constituting themselves, as they easily could, courts of appeal for their own licentiates, at all events, giving opportunities for discussing such subjects within the College buildings, and even sending friendly admonitions to those of their licentiates whose manner of conducting their practices seemed to require such warnings, they might do much to bind the whole profession to them, and to open up to themselves and their official successors an entirely new sphere of influence and usefulness. The Dublin Colleges, having both of them schools connected with them, might very well set the example in this matter to the sister colleges, and make arrangements by which the tie between the student and his college, begun *in statu pupillari*, should be continued after he has become a fully-fledged practitioner, and even gone elsewhere to practise. The details, of course, would take some trouble to arrange, but the Colleges would find themselves repaid for their exertions by the larger share they would have in the life of the profession, and by becoming even more important authorities than they are at present. It will be seen, therefore, that these ethical matters are not so unconnected with the subject of medical schools as might at first appear. It should also be mentioned that the London and Edinburgh Colleges already send out notices of all important meetings to their Fellows resident within the United Kingdom, and invite their attendance at such meetings. But this is a democratic age, and the goodwill of the licentiates and members is quite as well cultivating as that of the Fellows, as the English College has found when its applications to the Privy Council for a charter giving new powers to the governing body have been opposed by large

numbers of members on the ground that they were not represented on the governing body. The lesson learned by the railway companies with regard to third-class traffic paying so much better when the carriages were altered from the old cattle trucks, thought good enough in the time of our fathers, to the comfortably cushioned compartments now found on all the great lines of railway, is one which, *mutatis mutandis*, should be laid to heart by all Progressive councillors of colleges in an age in which institutions, if not progressive, are apt to dwindle, decay and die.

THE PRELIMINARY EDUCATION OF MEDICAL STUDENTS.

This is one of the points to which Mr. Carmichael naturally wished attention to be directed in these Essays, and it is one which has taken up a good deal of the time of the Medical Council during the last year or two. It had been found both by teachers and examiners that a considerable number of students manage somehow to pass their preliminary examination in general education without acquiring that mental training which is essential in order to place them in a position to take advantage of their opportunities for learning, or to enable them to write their answers to examination questions in the Queen's English. A couple of years ago the Education Committee was requested by the Council to revise their list of recognised examinations, with the object in view of removing from it any which might be found to fall below the standard of the entrance examinations or the junior local examinations of the Universities of the United Kingdom. This seemed all the more necessary because it was found that nine-tenths of the students entering upon their medical studies had availed themselves of the lowest recognised tests.

The Committee did their best to make their report full and convincing, and they had their attention early drawn to the second-class certificates of the examinations of the College of Preceptors, for out of twenty-nine candidates in the Army, Navy, or Indian Medical Services whose mode of entrance could be traced, and of whose general education complaint was made, no fewer than fourteen had passed at the College of Preceptors, the others being distributed over nine different recognised

examinations. An exceedingly bad record was also shown by the students who had passed their preliminary at the Apothecaries' Hall, Dublin, but this examination has since been discontinued.

Examination papers and the answers of those who had passed at the College of Preceptors were examined, with the result that the conviction forced itself upon the minds of the Committee that the standard was not adequate, was distinctly below that of the University Junior Local Examinations, and that, over and above this, the stringency with which pass marks were awarded was less. The head masters of some seventy schools in all parts of the Kingdom were addressed, and asked their opinion as to the standard of these examinations respectively. Of those whose replies were in such form as to be available, a large majority accorded the first place to the University Junior Local Exams. The College of Preceptors, while giving the Committee every facility by furnishing papers, answers, etc., strenuously combated the conclusion thus pointed at. The balance of evidence, however, left no doubt in the minds of the Committee that these second-class certificates of the College of Preceptors should be expunged from the list. Another preliminary examination which found little favour in the eyes of the Committee was that conducted by the Conjoint Board of the Royal Colleges of Physicians and Surgeons in Ireland, but as it was found that some improvements had been made in it, and it was feared that inconveniences of a grave character might have been produced by striking this examination out, it was resolved for the present to retain it.

In Scotland the Educational Institute, frankly admitting that its standard was not sufficiently high, issued fresh regulations designed to meet the requirements of the Medical Council, and it was agreed that during 1899 the results of these changes on the examinations were to be inspected.

The recommendations of the Committee, which some members of the Council thought insufficient, led to a lively debate. While some were inclined to think that the recommendations went far enough, fearing that any increased stringency would starve the supply of medical students and lead to a still greater difficulty than at present for country prac-

titioners to obtain qualified assistants, one member of the Council even going so far as to predict that in case of a war the supply of trained men would be found quite inadequate—a prediction which the war which has since occurred has shown to be quite the reverse of the truth—others urged that the examinations still to be accepted as reaching the minimum standard—namely, the University Junior Local Examinations—are intended for, and, as a matter of fact, are passed by, boys of an age below that at which it is desirable for a student to commence his medical studies. Fifteen is the age for which they are adapted, and the expression, “examinations for little boys,” with reference to them, frequently occurred. It was stated that the Senior Local Examinations were intended for boys of sixteen or sixteen and a-half years, and that, in fact, this was the average age of those entering for them; so that this was the lowest standard really appropriate to the medical student if he is to be possessed of average attainments for his age. This is further indicated by the regulation that at the Cambridge Senior Locals a boy cannot go in for honours if he has attained the age of sixteen years. It was further urged, and this was perhaps one of the most cogent arguments used, that the large proportion of rejections of candidates at the purely professional examinations is in great measure due to insufficient general education, the students coming up to the medical schools without having acquired the power of learning or of expressing themselves properly. The debate seems to have made it clear that a majority of the Council is in favour of raising the standard of examinations which give admission to the *Students' Register*, a result that ought to be hailed with pleasure by all who desire, as Mr. Carmichael did, to see the profession made a more respectable body than it is at present.

On another point, connected both with the question of preliminary studies, and with that of the first year's course of medical study, the Medical Council and the English Colleges forming the Conjoint Board came last year into direct conflict. The question came before the Education Committee under two headings—first, the question whether a year of scientific study *before registration* as a medical student should, in *exceptional* cases, be recognised as constituting one of the five years of

medical study; and second, the question whether a year of scientific study taken *after registration*, but in an institution of the status and character of an ordinary secondary or grammar school, should *regularly* be recognised as constituting one of the five years required.

The first question had been raised by Section X. of the Scottish Universities' Ordinances. Against this Section both the Education Committee and the Council itself had more than once protested, both as being a dangerous precedent and as being wholly unnecessary. The second question was a far more important one, which, it seems, ought to have been raised when the Conjoint Board in England obtained from the Council the concession that scientific study before registration should qualify for the First Examination. One chief object of the Council's action in the matter has been to secure that ordinary school work should be completed and tested by a sufficient preliminary examination before the course of medical study was begun. It has also been felt to be desirable that the medical student should have his work at the ancillary sciences conducted under higher conditions and with better safeguards as to efficiency than can be looked for in secondary schools, the majority of whose pupils are still boys and girls. The wholesale recognition of ordinary day schools as teaching institutions, in which the first year of medical study may be pursued, must practically frustrate this object, and lead, as the Education Committee point out, to various evils, including a practical waste of the first year of study. The Committee, therefore, finding that a number of Board Schools were being recognised by the Conjoint Board for England, wrote to ask if these had each been inspected before recognition, as required by the Council, and six weeks afterwards received a reply stating that five out of the eleven schools named in their letter had now been visited, but that the Committee of Management of the Conjoint Board were of the opinion that the question of the recognition of institutions was entirely one for the respective licensing bodies to determine for themselves. The Education Committee thereupon reported to the Council that the recognition of "teaching institutions where physics, chemistry and elementary biology are taught," without due inspection, was not in accordance with the regulations of

the Council, and that it appeared to them necessary that the Council should now take a further step by informing the licensing bodies that schools for boys and girls were not intended by the Council to be regarded as institutions at which the first of the five years of medical study may be spent; and that the Council should require that before registration is effected a student should have commenced medical study at a University or School of Medicine, or at a scientific institution recognised by one of the Medical Licensing Bodies, and *approved by the Council*. The reasonableness of this report would at once commend it to impartial observers, but the representatives of the English Colleges at once raised objections to it, and what the late Sir Dominic Corrigan called "the battle of the shops" at once began. It came out in the discussion that the matter had been raised by a letter addressed to the Council by the Secretary of the Irish College of Surgeons, in which attention was drawn to certain departures from the requirements of the Council established two or three years previously. It was pointed out that according to the recently issued rules and regulations of the Conjoint Board in England, it was possible to obtain a medical course of four years, in spite of the requirement of the Council that the course should be one of five years; the Conjoint Board of England, it was said, in offering to its students a four years' course, was pursuing a plan in direct opposition to the recommendations of the Council, and apparently intended to set the authority of the Council at defiance. The year spent at a grammar school was not a *bona fide* year of medical study, and it was not for such a purpose as that that the Council had added a year to the four years previously required. It was pointed out, too, that if two powerful corporations like the English Royal Colleges were allowed to defy and act contrary to the recommendations of the Council, their example would probably be followed by other bodies, to the detriment of the Profession.

In the result the motion for the adoption of the Committee's recommendation was carried by a large majority, and the Registrar was directed to call the attention of the licensing bodies to it. This revolt of the English Colleges, as it has been well termed, against the decision of the Medical Council as to what should be recognised, for the purposes of students' regis-

tration, as the commencement of professional study, came up again for discussion at the May meeting in the present year. The two Colleges took up the position that what they are to consider as a fulfilment of their curriculum is a matter for them to decide; in other words, they stuck to their guns, and maintained the attitude they assumed last year; they had in the meantime issued a lengthy document, which, being marked "confidential," had not been circulated among the members of Council previous to its meeting, nor were there even sufficient copies to supply each member present, and hence a postponement of the matter, after a good deal of time had been spent in discussing it, was perceived to be inevitable before a final decision could be come to. The position of the Council, however, on this important subject was made quite clear by its Education Committee in its Report, which pointed out that three questions arise for the Council's consideration—(1) Whether it is in the interest of medical education generally that the first year of medical study should be taken at ordinary schools of higher elementary or of secondary education, even when these give good elementary instruction in science in addition to the other subjects of school teaching? (2) Whether it is contrary to law, or beyond the powers of the Council, to impose the conditions formulated in the regulations under which a student may be registered as having passed a suitable preliminary examination, and as having entered on a course of medical study? (3) Whether any one of the licensing bodies can legally require the General Medical Council to enter on the *Register* of Medical students the name of a student who has not fulfilled the conditions prescribed by the Council itself?

On the first question the Committee maintained that ordinary school education should be completed before the five years' medical curriculum is entered upon, and they believe that the regulation in question is the simplest practical method of ensuring this. With regard to the second and third questions, they recommended the Council to take the opinion of its legal adviser before next session.

In the course of the debate which followed the presentation of this Report, it was pointed out that the Council had always maintained that the registration of medical students was within

its own power and control, but the course of study was a matter which was under the supervision of the medical licensing bodies, and one which the Council had no legal power to define beforehand or to control. If they were dissatisfied with the actual course of study which the Colleges prescribed, they could only report the matter to the Privy Council, as directed by the Act of 1858. It was, therefore, necessary to distinguish clearly between the registration of students, which was one thing, and the course of study prescribed by any particular body, which was quite another. All that was desired by the Council was to ascertain that the licensing bodies prescribed a course of study which was sufficient, and that the students who applied to be registered had *bonâ fide* entered upon a five years' course of study. The two English Colleges apparently claimed not to recognise the Council's right to do either of these things, but there seemed no ground for suggesting that the Council was acting either contrary to law or beyond its powers. The *Students' Register*, it was pointed out, was the Council's own creation; and it had a right to say what course of study the student should have commenced before being entered on it. The student, when he registers at the commencement of his professional studies, does not declare, and often does not know, to which of the licensing bodies he will ultimately present himself. Hence, if the Council were to give way on this point, it would probably be tantamount to imposing the views of the Conjoint Board in England upon other licensing bodies, some of which strongly hold very different opinions. On the other hand, if these other qualifying bodies took a similar view as to their independence, and refused to recognise the courses which they disapprove as being the commencement of professional education, notwithstanding the Council's registration, students thus registered would be restricted in their choice of an examining body to the Conjoint Board in England.

Quite apart from the dispute between the Medical Council and the English Colleges, the broad question has been raised whether a classical or a scientific preliminary education would be the more useful to a medical student. In favour of the classics it has been urged that ignorance of Latin and Greek is a positive obstruction to the pursuit of many branches of study; that the

scientific sense is cultivated by studies which have not an immediate bearing upon daily life ; that an interest in knowledge for its own sake is promoted by them ; that the power of thinking receives a varied general exercise in these studies ; and that they are of historical value, as illustrating the foundations on which so much of modern thought and life has been built. On the other hand, it has been urged that several of these reasons hardly apply to the general run of medical students, that others of them would apply equally to the study of mathematics, and that acquaintance with French and German would probably be more useful to the student in after-life than the dead languages. However this question may ultimately be decided, all will probably agree that it should not be possible, as at present, for a youth to register as a medical student with but little knowledge of English grammar and spelling. The suggestion has been made that we should imitate the Germans in having a "leaving examination" for boys leaving school, which would include, of course, only the subjects in which they had been taught, and so avoid cramming for a special preliminary examination, and if this could be carried out so as to make it a real test of what each boy knew it would certainly be preferable to the present system ; but neither public nor private schools are likely to introduce such a system without very great pressure being put upon them, as it would manifestly be against their interest to reveal so clearly as this would do how very little the average schoolboy really learns, unless it be athletics, during his years at school. Hence also the suggestion that such subjects as botany, chemistry, and physics should be removed altogether from the medical curriculum as compulsory subjects, and either taught in the schools previous to registration or else wholly neglected by the average medical student, is one which, in the present state of teaching such subjects in boys' and girls' schools, can hardly be carried out.

III.

THE STATE AND MODE OF EXAMINATIONS, OR OF TESTING THE QUALIFICATIONS OF CANDIDATES, OF THE DIFFERENT LICENSING COLLEGES OR CORPORATIONS OF MEDICINE, SURGERY, AND PHARMACY.

Mr. Carmichael desires that under this heading the authors of these essays should consider the most practical mode of rendering the examination as demonstrative as possible—*i.e.*, in Anatomy, by having the dead body placed before the candidate; in Chemistry, Botany, and Pharmacy, specimens of minerals, plants, and pharmaceutical preparations placed before him; and in the practice of Physic and Surgery, the candidate to be placed in the wards of an hospital; but, happily, there is little need now to advocate a course which has been adopted by the examining bodies themselves as the only true way of ascertaining the qualification of candidates. Not only is the dead body placed before the student who is being examined in anatomy, but pathological specimens of diseased structures, whether recent or preserved, are placed before him at his final, at which also he is expected to recognise microscopical specimens in all three portions of the examination. The difficulties which, in Mr. Carmichael's time, were probably imagined to prevent candidates for a diploma being taken into the wards of a hospital for examination, have disappeared, and they are now taken in as a matter of course, and given cases, previously selected, to diagnose. In examinations in Chemistry, Botany, and Pharmacy, as we shall see, the candidate has specimens of the chief drugs and chemicals used in medicine placed before him, also the plants from which any of these are obtained, and in the major examination at the Pharmaceutical Society he is also required to make and describe microscopical preparations of any organised vegetable drugs officinal in the *British Pharmacopæia*, and to point out distinctive histological features in the same. He is also expected to point out obvious adulterations present in powdered drugs, from comparison with authentic material. It will thus be seen that what must have seemed a counsel of perfection to Mr. Carmichael's contempo-

raries has now become a commonplace of examinations in the time of which we write.

Before considering separately the examinations held in each country, we may look with advantage at the latest statistics of results of examinations furnished to the General Medical Council by the Conjoint Boards in each Kingdom. In the year 1899, of 568 candidates examined in Anatomy and Physiology by the English Conjoint Board for medical diplomas, 342 were passed and 226 rejected, a percentage of rejections of 39·78; of 168 candidates examined by the Irish Conjoint Board, 79 passed and 89 were rejected, a percentage of 52·97; in Scotland, of 247 examined by the Conjoint Board, 135 passed, while 112 were rejected, a proportion of 45·34. For the final examinations, the English Conjoint Board examined 824, of whom 513 passed and 311 were rejected, a percentage of 37·74; the Conjoint Board of Ireland, 137, of whom 76 passed and 61 were rejected, or 44·52 per cent.; the Conjoint Board of Scotland examined 448, of whom 224 passed and 224, or exactly 50 per cent., were rejected. Taking the totals for all Universities and Corporations, the number of candidates examined for the first examination was 2,984, of whom 1,697 passed and 1,287 were rejected, a percentage of 43·13. For the second examination, of 3,494 examined, 2,094 passed and 1,400 were rejected, or 40·06 per cent. For the final examination 3,859 were examined, of whom 2,488 passed and 1,371 were rejected, a percentage of 35·52.

In the first examination for the Diploma in Public Health, of 158 examined, 110 passed and 48 were rejected, or 30·37 per cent., while in the second examination of 140 examined, 23 or 16·42 per cent. failed to satisfy the examiners.

There can be little doubt that there ought to be some lessons to be learned from these statistics, though, curiously enough, the Examination Committee of the Medical Council some six years ago, after similar tables of statistics had been forwarded to the examining bodies, reported to the Council that they regretted to find that no information of any practical value was forthcoming from them, nor did they consider that such was likely to be obtained by this, or by any other, method of inquiry founded on a basis of mere statistics. Notwithstanding

this opinion, however, the Council rightly continues to publish the statistics, which some day will be found to contain much matter for reflection and digestion. We may now go into particulars as to the actual state of examinations in the three countries at the present time, and, taking the English Conjoint Board, formed by the Royal College of Physicians and Royal College of Surgeons, follow the course of their professional examinations for the double diploma of L.R.C.P. and M.R.C.S.

In the first examination there are four subjects on which the candidate is examined, namely—(1) *Chemistry and Physics*, (2) *Practical Pharmacy*, (3) *Elementary Biology*, (4) *Elementary Anatomy*.

On the subject of *Physics* in relation to chemistry, he is liable to be questioned either in his written, oral, or practical examination on such subjects as the diffusion of gases and liquids, dialysis and osmosis, specific gravity, atmospheric pressure, the air-pump, the barometer, and Boyle's law; also with reference to heat, thermometers, hygrometers, conduction, radiation and convection, the relation of heat to work, specific heat, and heat of combustion. He must also have such a knowledge of electricity as will enable him to answer questions on frictional electricity, the two electrical states, conduction, insulation, galvanic electricity, constant currents, simple forms of batteries, induced currents.

In *Inorganic Chemistry* he may be examined on the elements, their mechanical mixture and chemical compounds, the laws of chemical combination, the atomic theory, the meaning and use of chemical symbols. As to hydrogen, he must know the units of weight and volume; as to oxygen, its natural occurrence; ozone, combustion, respiration, oxidation and reduction, oxides, bases, acids, salts. He must be acquainted with the composition and properties of water, whether rain, river, or spring water, and the properties of hard and soft waters. On nitrogen he may be asked the composition of the atmosphere, and the methods employed for determining such composition. He may also be asked questions on ammonia, carbon, halogens, bromine, iodine, sulphur, and phosphorus, or on any of the following metals and their compounds:—Sodium, potassium, calcium, barium, magnesium, zinc, aluminium, iron, manganese, silver,

copper, lead, mercury, arsenic, antimony, bismuth; also on borax and boracic acid, chlorides of the metals named above, bromides of sodium, potassium, ammonium, iodides of potassium, iron, mercury, oxides and sulphides, carbonates, sulphates and nitrates of the metals, etc.

In *Organic Chemistry* the candidate must know the ultimate organic analysis as regards C. H. and N., the determination of empirical formulæ and molecular weight. He is also liable to be examined on hydrocarbons, alcohols, carbohydrates, the constitution of fats and saponification, glycerine, and the various acids.

In *Practical Chemistry* he is required to identify any of the substances in the following list:—Sodium, potassium, ammonium, calcium, barium, magnesium, zinc, iron, aluminium, copper, silver, lead, mercury, bismuth, antimony, arsenic, which may be present as metal, oxide, sulphide, or as a simple salt: also hydrochloric acid, hydrobromic, hydriodic, nitric, carbonic, sulphuric, and phosphoric acids. The candidate is required to give equations illustrating the chemical reactions involved in testing for the above substances, and, if requested, to explain the same. He is also required to prepare one of the following compounds, to exhibit to the examiners the preparation when made, and to represent by equations the reactions involved:—

Chloride of sodium, of ammonium, or of lead.

Iodide of lead or of mercury.

Oxide of copper or of mercury.

Hydroxide of sodium or of copper.

Carbonate of sodium, of calcium, of magnesium, or of bismuth.

Oxalate of ammonium.

Oxalate of urea.

Nitrate of potassium, of barium, or of lead.

Phosphate of calcium or of iron.

Sulphate of sodium, of calcium, of magnesium, of zinc, or of copper.

In *Practical Pharmacy* the candidate is required to know the general nature and composition and the more important physical and chemical characters of a long list of Pharmacopœial drugs, the composition of the preparations made from them, and

the processes employed in making these ; also the doses of the drugs and of their preparations ; he also has placed before him a number of drugs and preparations which he is required to recognise, such as iodine, iodide of potassium, bromide of potassium, sublimed and precipitated sulphur, phosphorus, phosphate of iron, prussic acid, carbonate of ammonia, permanganate of potassium, sulphate of magnesia, sulphate of copper, mercury and its preparations, acetate of lead, arsenious acid, sulphate of iron, granulated sulphate of iron, citrate of iron and ammonium, citrate of iron and quinine, reduced iron, chloral hydrate, iodoform, æther, chloroform, sweet spirits of nitre, opium, paraldehyde, carbolic acid, salicylic acid, aconite root, coca, jaborandi, quassia, calumba and gentian, physostigmatis semen, conia fructus, cinchona rubra, sulphate of quinine, ipecacuanha and senega, nux vomica and strychnine, belladonna, stramonium, cannabis, indica and digitalis, aloes and aloin, colocynth, elaterium, jalap, rhubarb and senna.

The full list is a good deal longer, but the above will show to how great an extent Mr. Carmichael's ideas as to placing pharmaceutical preparations before the candidate are being carried out in the present day.

Elementary Biology.—In the examination on this subject the candidate is required to show a practical acquaintance with the following topics :—

1. The chemical composition and properties of protoplasm ; the structure and properties of cells ; cell-division ; the general outlines of the varieties of cell-structure in the tissues of animals and plants.

2. The structure and life-history of amœba, vorticella, proto-coccus, and spirogyra as illustrative of :—

(a.) The differences between plants and animals.

(b.) The general phenomena of the life history of low organisms.

(3.) The structure and mode of life of saccharomyces and bacteria ; fermentation ; putrefaction ; modes of spread of bacteria.

4. The relations between multicellular and unicellular animals, as illustrated by a comparison of the structure, physiology, and life-history of hydra and amœba.

5. The colomata-vertebrata, as illustrated by a comparison of the general characters of the skeleton, and of the digestive, circulatory, respiratory, genito-urinary, and nervous systems of the dog-fish and the frog.

6. The structure of ova and spermatozoa; fertilization; the early stages of development; the formation of the segmentation cavity, of the gastrula, archenteron, and cœlom, and of the epiblast, mesoblast, and hypoblast, with an enumeration of the chief systems of organs derived from the three layers in a vertebrate.

In *Elementary Anatomy*, the examination in which cannot be passed until the end of the first winter's session at a medical school, the candidate is examined upon the bones, and the attachments of the muscles to the bones of the upper and lower extremities.

In the *Second Examination* on Anatomy and Physiology, the student is examined on the structure of the tissues of the body, and of its organs; he is required to recognise microscopical preparations of the tissues and organs; he has to give the chemical composition of food, and of the tissues, secretions, excretions, and other fluids of the body, the physiology of digestion, absorption, circulation, respiration, secretion, nutrition, animal heat, and animal motion. The functions of the nervous system, and sense-organs, and re-production. He is expected to have practised, and to be familiar with general histological methods, including the examination of fresh tissues, the fixing and hardening of tissues and organs; the cutting, staining, and mounting of sections; and he may be called upon either to perform or to describe any of these methods. He is also expected to be able to practise at the examination the usual methods of chemical and physical examination of the various fluids and solids of the food and of the animal body, as well as the special tests by which the more important substances, both inorganic and organic, occurring in the body are detected and estimated. He may further be required to show an acquaintance with the mode of action and methods of employment of the commoner kinds of apparatus which are used in physiological work, especially in regard to the investigation of muscle, the heart, the pulse, and respiration.

In the *Third Examination* the range of subjects under the

head of Pharmacology includes the following topics :—The application of heat and cold by both dry and moist methods, counter-irritation, bleeding, leeching, and cupping.

The Pharmacopœial drugs and preparations defined in the Section on Pharmacy are examined on with reference to the channels of absorption and elimination of drugs, the principles of dosage—idiosyncrasy, accumulation, toleration, habit—as well as the toxic effects of—

Drugs containing arsenic, mercury, and lead.

Iodides, bromides, and salicylates.

Chloroform and chloral hydrate.

Morphia, atropine, strychnine, and quinine.

Acetanilide and phenazone.

Digitalis, ergot, camphor, oil of turpentine.

Cantharides and phosphorus.

In the examination on *Forensic Medicine* questions are asked with reference to the examination of persons found dead, their identification, the time and cause of their death, and as to violent causes of death, by drowning, strangulation, suffocation, mechanical injuries and wounds.

With reference to poisons and poisoning, the symptoms and *post-mortem* appearances in cases of poisoning by mineral acids, mercury, antimony, arsenic, copper, lead, and phosphorus ; also by oxalic acid, carbolic acid, opium, strychnine, belladonna, aconite, chloroform, chloral hydrate, and cyanides.

The candidate is also asked as to the duties of medical men in cases of poisoning as regards observation, treatment, and preservation of parts for analysis ; the preliminary tests for poisonous substances for clinical use before reference to an analyst. He is further examined on the medico-legal points in connection with pregnancy, delivery, rape, criminal abortion, infanticide ; also on the Lunacy Laws, in so far as they affect the medical practitioners when signing certificates of lunacy.

In *Public Health* the candidate is examined on the subject of Water in its relation to health and disease, the characters and classification of drinking water, the causes and sources of impurities found in water, and the methods of purification, and the diseases conveyed by water, and the methods of dealing with epidemics of such diseases.

Another subject of examination under this heading is Air in relation to health and disease, the causes and sources of impurities found in air, the diseases conveyed by it, and the quantity of air necessary for health, also the principles of ventilation. Soil also, with its impurities and diseases connected therewith, also the methods of dealing with excreta and sewage, are included in this examination, as well as food and dietetics, the principles of house-drainage, the principles of disinfection, and the mode of action of the chief disinfecting agents, likewise the provisions of the Act for the Notification of Disease.

The *Final Examination* in clinical medicine, clinical surgery, and midwifery and diseases peculiar to women, consists partly of written papers and partly of *viva voce* examinations on patients.

It will be seen that at every stage of this examination care is taken to make it as demonstrative as possible by placing specimens of plants, pharmaceutical preparations, etc., before the candidate, examining him on the bones and dead body, and finally giving him a *viva voce* examination on actual patients.

THE EXAMINATIONS OF THE APOTHECARIES' HALL, DUBLIN.

Three reports were submitted to the General Medical Council at its June Session last year.

1. A Report by the Examination Committee on the inspection made by Dr. Coupland of the examinations in October, 1898.—For the first professional examination four candidates entered for the whole or part of the examination, of whom one candidate, who took up physics, chemistry, and biology, passed. The others, who took up fewer subjects, failed. Only one of the three candidates in physics passed with pass marks; in chemistry, the solitary candidate passed with 51 per cent. of marks; in biology, one of the two candidates passed, and the inspector reported that the paper was even more elementary than that submitted on the previous occasion when he inspected. In the subject of anatomy the solitary candidate was rejected; but the inspector reported that the requirements of the examination were greater than should be demanded from a first year's student.

In the second professional examination the solitary candidate passed with 51 per cent. of marks, and with 52 per cent. in

physiology. For the third professional examination three candidates entered, one for all the subjects (*a*) Pathology, (*b*) Medical Jurisprudence, and (*c*) Hygiene; one for (*a*) and (*b*) only, and one for (*b*) only. One of the two candidates in Pathology passed, but the inspector described the marks as rather above the value of the answers. In Medical Jurisprudence the three candidates were rejected. In Hygiene the solitary candidate passed, but the inspector reported that the paper was elementary, and did not cover sufficiently wide ground. In reply to the inspector's comments the Governor and Court of the Apothecaries' Hall had indicated to the examiners in hygiene the necessity of increasing the value and varying the questions. The Examination Committee directed the attention of the Medical Council to the fact that this examining board still manifested caprice in the allotment of marks, and appeared at times to adjudicate the work of candidates too highly. It appeared, however, they said, to have made considerable efforts to meet the suggestions made to it by the Medical Council.

2. A Report by the Examination Committee on the inspection made by Dr. Gibson of the examination in January, 1899.—There were no candidates for the first professional examination. Four candidates presented themselves for the second, two for the third, and two for the final examination. The Inspector reported that all the candidates for the second part had passed parts of their earlier examinations before other Boards in Ireland and Scotland. The examinations in Histology and Materia Medica were well reported of. He reported the second, third, and final examinations as "sufficient." The Examination Committee expressed the opinion that these examinations were being gradually improved in character, but still noted that they attracted, as a rule, men of inferior attainments, who were striving to pass into the profession by reiterated efforts in piece-meal fashion. The Examination Committee noted the undesirability of this system, which appeared to leave candidates free to present themselves before any Board for parts of an examination, and encouraged a piece-meal method of passing various subjects.

3. A Report by the Examination Committee on the inspec-

tion made by Dr. Gibson of the examination in April, 1899.—The Committee called the attention of the Medical Council to the fact that the entire April quarterly examinations of this Board consisted in the re-examination of two rejected candidates in a solitary subject of the second examination, and further noted that these candidates were in process of securing a diploma to be gained by piece-meal examinations before different Boards in different parts of the United Kingdom, a system which could not be too strongly deprecated, and which had been condemned by the Medical Council.

In the discussion upon these Reports in the Council it was pointed out that this body was now placed under the Council's tutelage, and that the Privy Council had made the Medical Council responsible for the carrying on of its examinations. Therefore, the Council had to watch the examinations carefully. This cost them a considerable sum, and in the previous fifteen months they had spent over £300 in inspecting the examinations of this one Board. It was asked what practical use there was in expending £230 in the inspection of a single examination which produced one or two successful candidates, but the greater portion of rejected ones. At the May meeting of the Council this year it was reported that there should have been meetings of the Examination Board during the month of April for the First, Second, and Third Examinations, but as there were no candidates for the First and Second Examinations, the Third alone took place. Only one candidate appeared, and he was admitted to an examination in the subject of *Materia Medica*, this single subject being alone necessary to complete his Third examination, the other subjects having been passed in October, 1899. This candidate was rejected. The inspector reported that he was quite satisfied with the conduct of the examination.

The Council's Examination Committee again drew attention to the piece-meal mode of passing examinations, which it thought undesirable and unworthy of recognition by the Medical Council. It also drew attention to the fact that the yearly average of those who obtained the single Apothecaries' Diploma at Dublin was only five. It seems evident that this body, as an examining and licensing medical corporation, is

dying out, and it would surely be better for it to place itself at the head of the pharmacists of Ireland, and direct its efforts towards imitating the good work done by the Pharmaceutical Society of Great Britain, than to struggle on even under the protection of the Privy Council, in a vain attempt to supply third-rate diplomas for which there is no real demand.

The disappearance of this particular examining body would certainly not be felt as a grave misfortune in Ireland, where the two Universities and two Colleges seem to be amply sufficient for all wants. Neither would it be without precedent—one of the two licensing bodies in Aberdeen which at the time of the passing of the Medical Act in 1858 were recognised as conferring registrable degrees—the University and King's College, Aberdeen, and the Marischal College and University of Aberdeen—having disappeared, and only one University of Aberdeen now remaining. In England, on the other hand, a new examining body has been added since 1858 in the Victoria University, and before long there will be another, namely the Birmingham University, whose medical degrees will be registrable, as those of all Universities in the United Kingdom are, under the Medical Act. It is, therefore, simply a matter of convenience, which the Medical Council, if it were differently constituted, ought to have power to decide, whether there is any real need for continuing the examinations at the Apothecaries' Hall, Dublin, at such great expense, for the sake of the few students of poor mental calibre who take advantage of them to obtain a qualification.

THE CONJOINT EXAMINING BOARD IN SCOTLAND.

In Scotland, it is to be noted that the two Royal Colleges of Edinburgh have united with the Faculty of Physicians and Surgeons of Glasgow to hold a series of examinations—partly in Edinburgh and partly in Glasgow—which give students facilities for obtaining, after passing this one set of examinations, the qualifications in Medicine and Surgery of the three Scottish Corporations, and the right to register themselves as L.R.C.P., Edin. ; L.R.C.S., Edin. ; and L.F.P.S., Glasgow.

The fees for this series of conjoint examinations, whose successful passing confers on the student the right to use such a brilliant array of letters after his name, amount to thirty pounds,

as against forty guineas charged by the English Conjoint Board, and a similar sum charged by the Irish Conjoint Board, and also as compared with fifteen guineas charged by the English Apothecaries' Society, and twenty-one guineas charged by the Irish Apothecaries' Hall. There is here a direct competition in the matter of fees between Examining Boards in the three divisions of the kingdom, for which the only remedy seems to be the establishing of one portal in each division with similar fees.

Last year an objection was raised by two Glasgow practitioners as to the sufficiency of the examination for the Fellowship of the Faculty of Physicians and Surgeons, Glasgow, but the Medical Council, to whom their complaint was sent, did not take any action in the matter, being apparently of opinion that the examinations of each body for its higher qualifications were beyond the scope of the Council's authority, which had to do only with those which gave admission to the Register. Possibly also it may have been felt by some members of Council representing Colleges of Physicians, that an awkward question might be raised as to the conferring of Fellowships without any examination at all. Why this should be the case, while the examinations of two, at least, of the Colleges of Surgeons are sufficiently severe, is a mystery we need not attempt to solve here.

THE ONE PORTAL SYSTEM OF EXAMINATION.

The history of the efforts made during the last twenty or thirty years to introduce this much-needed reform shows once more how vested interests can and do prevent the carrying out of public improvements, even when the necessity for these has been fully recognised by those most competent to judge. Again and again has the principle been recognised in Government Bills, the latest occasion having been the Government Bill of 1884, known as Mr. Mundella's Bill, which was founded on the recommendations of the Royal Commission of 1881. Owing to the unwise opposition of certain bodies in the Medical Profession, Mr. Mundella's Bill was talked out in the House of Commons, and since then no Government has cared to touch the subject. During the discussion on Mr. Mundella's Bill, Sir Lyon Playfair made a sort of counter-proposal, apparently at

the instance of the Scottish examining bodies. This was that the Divisional Boards to be formed under the Bill should send their examiners to take part in the final examinations of the Universities and Conjoint Corporations, so that candidates for admission to the *Register* might have the option of passing these examinations instead of the Board's. This alternative plan had the high recommendation of the late Professor Huxley and of Sir William Turner, and was said to have worked well in Germany. It evidently had the full approval of the Scotch examining bodies, since Sir Lyon Playfair was able to assure the House that even the Scotch Universities would allow the examiners of the Divisional Boards to take part in their final examinations in as full and complete a way as the General Medical Council and the Divisional Board might desire.

Nevertheless, it is quite plain that whatever may be said in favour of this plan, it is not the one portal system. What is wanted is an examination in each division of the Kingdom, conducted independently of the licensing bodies, having no connection with any university or corporation, which shall ensure a uniform standard of professional knowledge, and qualify for a registrable licence to practice. Some would even say that there should be a literal one portal—one and the same for all three divisions of the Kingdom—and they maintain that anything short of this will leave room for international under-bidding and for a levelling-down competition between the three divisions. This may be a counsel of perfection, and it would evidently add greatly to the expense and inconvenience of candidates if examinations were to be held either always in London or alternately in each of the three capitals, and so Irish and Scotch candidates had to travel to London, or English and Irish to Edinburgh, or English and Scotch to Dublin, in order to be examined. A single portal for each of the three countries seems to be the most reasonable proposal, and as the examining bodies have had the opportunity, and have not availed themselves of it, for forming such a combination voluntarily, the English Colleges or their governing bodies, having an invincible repugnance to joining with the Society of Apothecaries, as the Irish Colleges have to being associated with their Apothecaries' Hall, it becomes the plain duty of the Medical Council to endeavour to get Parliament

to use its *force majeure* for the purpose in the interests of the public which Parliament represents. Sir Christopher Nixon's Presidential Address to the Dublin Branch of the British Medical Association in 1898 shows the evil influence of competition amongst the various examining boards and the benefits to be expected from the institution of a one portal system.

Sir Christopher Nixon, at all events, does not mince matters in regard to the evils of the present system and its tendency to depreciation of the standard of examination which should be maintained in all three countries ; and his address, as reported in the *British Medical Journal* of July 5th, 1898, forms a strong plea for the one portal examination, which, in spite of the opposition to it hitherto shown by the Scotch bodies, will doubtless come in time, and prove as great an advance on what went before it as the Medical Act of 1858 did, which evolved order out of chaos as regards the Irish and Scotch qualifications, that previously only gave a right to practise in Ireland and Scotland respectively, while some of the English qualifications gave a similar right within certain defined areas alone. The "Dutch Auction" of diplomas to which Sir Christopher Nixon refers, and the "Battle of the Shops" of Sir Dominic Corrigan, are very significant expressions.

THE FUTURE OF THE MEDICAL PROFESSION IN GREAT BRITAIN AND IRELAND.

A celebrated writer has said that it is never safe to prophesy unless you know what is coming ; but while not pretending to forecast the course of events during the century upon which we are about to enter, one may fairly deduce from the study of present conditions what will be the various forms of progression which we or our descendants may expect to see ; and first, as to its scientific progress, there can be no manner of doubt that the immense advances which have been made both in medicine and surgery in recent years will continue and increase during the twentieth century. The discoveries of Pasteur, Koch, and Lister have not yet borne nearly all the fruit they may be expected to do, and the Jennerian plan of protective vaccination has yet to be applied to other diseases besides enteric fever. The more the scientific study of medicine and surgery

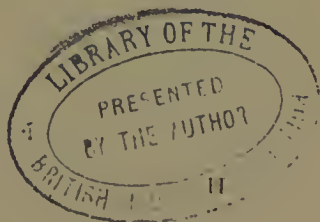
permeates all branches of the profession by means of post-graduate classes and colleges, the more certainly may further advances be expected in rapid succession.

Turning to the political aspect of medical progress, there can be little doubt that the Medical Council will, in the coming century, be made more directly representative of the two parties who are chiefly concerned in its doings—*i.e.*, the public, which, by the hands of the legislature, has clothed it with authority; and the profession, which, by means of its registration fees, provides it with funds. Whether the changes which will have eventually to be made in the Council's constitution should take the form of making it consist as to one-half of representatives of the profession, and as to the other half, of Crown nominees, or should indirectly promote the reform of the Colleges of Physicians and Surgeons as well, by requiring the representatives of those bodies to be elected by their members and licentiates instead of by their Councils, is a matter for future consideration; but the result of strengthening the Medical Council in the manner indicated would probably be that it would have far more weight with the Government of the day, and that no such unhappy occurrences as those of the Vaccination Act, or the Midwives' Bill, would be likely to happen in the future. When the one portal system of examination in each kingdom has been established, there will still be plenty of occupation left for the Royal Colleges, who would still continue their separate examinations for the higher medical or surgical diplomas—M.R.C.P. and F.R.C.S.—and would besides take the place of the old guilds, from which some of them originally sprung, in regulating the internal policy of the profession, settling ethical disputes, and making their college buildings centres of usefulness for all those to whom they had granted diplomas.

The British Medical Association, also, going on increasing until it has included the great majority of registered medical men among its numbers, would still have an ample sphere of activity before it and its branches, exercising year by year an increasing political influence, through its Parliamentary Bills Committee and its *Journal*, on all legislation affecting professional interests. Needless to say, this influence would be much more definite and powerful if, as has been suggested

above, the Committee and the *Journal* had several M.P.'s to rely on in the House of Commons. With regard to the general body of the Profession, it is evident that if the scientific advances made by skilful workers in hospitals and laboratories, in great medical schools and centres, are to improve the practice of the medical art generally, arrangements must be made whereby the results attained by those workers may reach the mind of the general practitioner, and promote in him a gradual adaptation to the new knowledge. Whatever his department of practice, he should endeavour to assimilate the ascertained results of scientific research, and the new facts brought to light by men whose lives are more or less devoted to abstract science. It has hitherto been unfortunately the case that a deep gap has existed between the investigators of nature in this country and the practical man of affairs—a gap which it may be hoped that Post-Graduate Colleges, when fully developed, will do something to diminish, and so bring more together these two sets of men whose hearty co-operation is essential to orderly and efficient progress. Nor can we doubt that when a more thorough co-operation has been established between consultants on the one hand and general practitioners on the other—between, so to speak, the most advanced science of the profession, and its most ordinary practice, and when it has become more fully recognised that what injures one portion of the body politic is detrimental to all—the reform of hospital abuses, which are now so much complained of, will speedily follow, the systems of club and contract practice will be put on a fair and proper basis, and a careful observance of the teachings of medical ethics will enable the whole Medical Profession to present a united front to its outside critics, and so to become, as Mr. Carmichael ardently wished that it should become, “more useful to the public, and a more respectable body than it is at present.”

“SIC VOS NON VOBIS.”



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